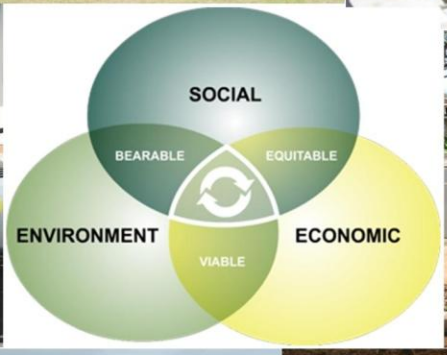
# County of Kaua‘i

# Operations Sustainability and Climate Action Plan




## 3-Year Plan

## April 2013 - June 2016

Holo Holo 2020
Growing Kaua‘i responsibly.

*When it is obvious the goals cannot be reached,*
*don't adjust the goals, adjust the action steps.*

- Confucius

*Prepared by:*

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## I. INTRODUCTION

There is an increasing awareness among citizens and business owners of the need to plan for much greater sustainability in the way we live and work, based on the current scientific consensus that climate change caused by carbon emissions is a serious threat to the ecological, social and economic health of our communities.

Under Mayor Bernard P. Carvalho, Kaua`i has made sustainability a top priority for this smallest island County in Hawai'i. By following the principles of sustainability, the County of Kaua`i is now formulating strategies for greater resource efficiency and reduced carbon emissions of public service delivery, and providing exemplary leadership by 'greening' its internal operations.

Holo Holo 2020
Growing Kaua'i responsibly.

Mayor Carvalho's **HoloHolo 2020 Vision** calls for all organizations, businesses, residents and visitors on Kaua`i to be part of creating an island that is sustainable, values our native culture, has a thriving and healthy economy, cares for all – keiki to kupuna, and has a responsible and user-friendly local government.

This **County Operations Sustainability and Climate Action Plan** (Plan) documents the initial steps that can be taken by County government, including setting long-range goals, adopting principles and practices, reviewing past and ongoing efforts, and identifying new opportunities for reducing carbon emissions and energy-related expenditures. The Plan also outlines a process for capturing information that will allow for performance measurements going forward.

In launching the sustainability planning process, Mayor Carvalho called for "bold action and big goals", noting that "government-as-usual won't work", and this Plan begins to deliver on that charge. This internal planning process was unique in that the leadership and professional staff across all County administrative departments actually produced the Plan, aided by process and technical consultants.

**Climate Action Goal**

**80% reduction of carbon emissions from County operations by 2023.**

This document describes the planning process and outcomes so far, details the structure and process of the County's evolving sustainability efforts, and provides the guiding framework for implementation of sustainability initiatives across County departments into the future. The Plan development utilizes a basic process of identifying what sustainability means to the County as an organization, where we are, where we want to go in the long term, and the process that will allow us to achieve our sustainability goals. **The Plan is designed to be flexible and 'living,' with periodic reviews and updates on progress, and will be improved or revised over time with better data collection methodologies, new inputs and new opportunities.** The Plan also is intended to support and guide future, broader community sustainability efforts.

**Guiding Statements** that have been consensually adopted are presented on the following page, and a summary of initial **Climate Actions** begins on page 8 *(with full details in **Appendix A**).*

**County of Kaua`i—Climate Action Consensus—Guiding Statements**

**Overall Goal**

Transform County operations with a comprehensive systems approach that delivers long-term sustainability and resilience. Achieve an 80% reduction of carbon emissions by 2023, as compared to baseline 2007 levels.

**20-Year Guiding Vision**

The County of Kaua`i is a responsible steward of the island's natural environment while meeting the needs of its citizens and providing a healthy and satisfying workplace for its employees.

**Working Definition of Sustainability For the County of Kaua`i:**

- Respecting the culture, character, beauty and history of our island's communities.
- Recognizing an urgent need to transition County operations so they are balanced among community, environmental and economic priorities.
- Meeting the current needs of Kaua`i's citizens without compromising the ability of our future generations to meet their own needs.

**Core Principles of Sustainability**

**Core Principle 1: Social Responsibility**

- ***Productive and nurturing work place*** – Create an environment in which all employees can learn and contribute to outstanding internal and external customer service.
- ***High citizen trust*** – Maintain the trust of our citizens through partnership, collaboration and quality service.
- ***Lead the Transformation*** – Be a model in the transition to a sustainable Kaua`i.

**Core Principle 2: Environmental Stewardship**

- ***Reduce consumption*** – Use all resources and material inputs conscientiously by increasing the efficiency of our operations and buildings and minimizing our environmental impact.
- ***Rethink waste*** – Minimize waste output, maximize diversion, and transform operations from a linear waste disposal model to a circular resource management model.
- ***Renewable energy*** – Prioritize the use of locally available energy sources and reduce dependence on non-renewable energy and fuels.
- ***Protect the environment*** – Strive to eliminate the disposal of toxins and other pollutants into our environment, including greenhouse gases, and seek sustainable alternatives.
- ***Enhance the environment*** – All County projects will be developed and implemented so that they minimize environmental impacts and enhance the natural environment wherever possible.

**Core Principle 3: Economic Vitality**

- ***Financial stability and independence*** – Provide for the needs of our community by utilizing the island's resources as we strive for self-reliance.
- ***Sustainable development*** – Ensure that proposed development contributes to the social and economic health of our community in harmony with the cultural and natural environment.

## II. BACKGROUND ON COUNTY SUSTAINABILITY INITIATIVES

Since adopting the U.S. Conference of Mayors Climate Protection Agreement In 2007, the County of Kaua`i has demonstrated a commitment to sustainability leadership through 'green' design and construction of County facilities, and implementation of renewable energy systems and programs.


Specific actions taken or underway by the County include (among others):

- Installation of photovoltaic energy systems at major facilities.
- Procurement of fuel-efficient hybrid gas/electric vehicles to replace older model gas only vehicles.
- Expanded recycling and source reduction programs for county employees.
- Procurement of 5 Nissan Leaf all-electric vehicles.
- Installation of 10 EV charging stations at County facilities.
- Vehicle Miles Traveled reduction program to get more County employees to ride the Kaua`i Bus and to carpool or rideshare.
- Refrigerator replacement program where metering pinpointed "energy hog" refrigerators and replaced them with Energy Star models.

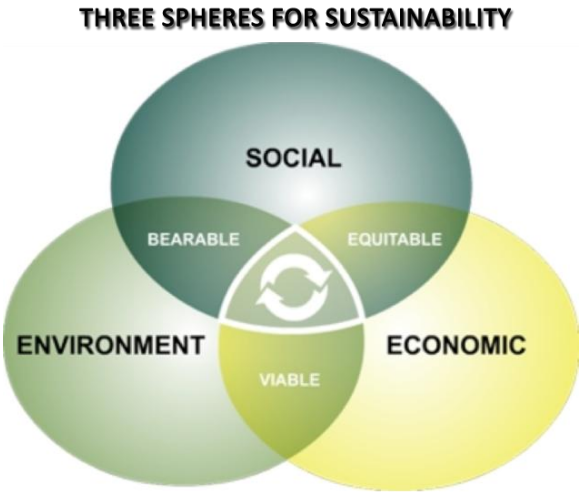
The Mayor's Office and departmental management have long recognized the need for a formal sustainability program. Beginning in the Fall of 2010, a training program began to introduce departmental leadership to the state of practice in carbon emissions management. Measurement of the County's operational carbon emissions was launched in early 2011. *(See **Appendix B** for the initial emissions inventory.)* This led to the hiring of the County's first sustainability manager in 2011.

In the Spring of 2012, an inter-departmental staff-level Green Team was established and began to lay the groundwork for the County's coordinated approach to sustainability. A list of Staff-level Green Team members as of April 2013 is found in ***Appendix C***.

As a follow-up action, the County joined ICLEI USA, Local Governments for Sustainability in August 2012, and has embarked on a program to benchmark its carbon emissions, using 2007 as the baseline year. The initial emissions inventory is presented in ***Appendix D***, and the results of a County employee survey *(which provided data for this inventory)* are shown in ***Appendix E***.

In the Fall of 2012, the County of Kaua`i launched a formal sustainability initiative focused on the operations of the County and its departments, and began formulating strategies to reduce government operations greenhouse gas emissions. Crucial input was provided by a survey of current and desired sustainability initiatives within departments and agencies *(see **Appendix F**).* An Administrative working group was formed to provide input to develop an Operations Sustainability and Climate Action Plan (see participants in ***Appendix I***).

## III. SUSTAINABILITY PLANNING PROCESS




The development and adoption of the guiding statements for this sustainability plan document *(see page 2)* was informed by an organizing framework for understanding sustainability as an operational principle. In the sustainability training process, County leaders were introduced to the need to broaden what is commonly a singular economic measure of human activity to include social and environmental conditions or trends.

In a "**Three Spheres**"*(or 'triple bottom line')* view, economic, social and environmental aspects are considered interdependent, and no organization or activity can be sustainable if it optimizes one of the three aspects at the expense of either of the other two *(see **Appendix G**).*

To ensure a coordinated approach guides this effort, the County followed the ICLEI- Local Governments for Sustainability method. The methodology underlying ICLEI's **Five Milestones** provides a simple, standardized means to guide local governments in their sustainability planning efforts.

With the adoption of this Plan, the County has met the first three milestones, as described in the following paragraphs.


**Establishing an Emissions Baseline**

An initial assessment of operational sustainability was provided by the County's first emissions inventory, which was presented to the staff Green Team in June 2012. The full report details where County emissions stood in 2007, the baseline year, as well as each year since, and initial data is contained in the full inventory report *(see **Appendix D**).*

**Setting Emissions Reduction Targets**

The Administrative Working Group was briefed on the scale of emissions reduction required to avoid catastrophic climate change, and subsequently adopted an overall emissions reduction goal of 80% versus 2007 before 2023. *(See **Guiding Statements**, page 2.)* This is based on the need identified by climate science to keep temperature increases below 2 degrees Celsius in

order to minimize climate change impacts.

**Considering Elements of Green Operations**


The state-of-practice in local government climate action has recently evolved to incorporate seven elements that encompass a typical plan for emissions reduction, and these elements were first introduced to County departments as part of the Sustainability Training process.

The actions governments can take to begin reducing greenhouse gas (GHG) emissions, conserve natural resources, and save money specifically include the seven elements shown here. After in-depth discussion, an eighth element, **Climate Change**, was added to incorporate the need for further work in this area.

The Administrative Working Group was provided with a range of possible actions regarding each of these elements, and this began the process of composing a complete plan. The Action strategies initially proposed have been compiled and grouped according to the eight elements of green operations.

**Focusing on Action Options**

To aid in evaluating these options, additional information was compiled for each proposed strategy, including a timeframe, lead and partnering department or agency, estimated cost, and metrics, together with detailed actions with timelines and primary responsibilities.

Following the development of goals and metrics, County departmental responsibilities were set for the key sustainability areas which were initially identified by the Administrative Working Group. The responsible lead and partnering departments and agencies will examine, develop (if feasible) and implement the identified actions and projects that move the County toward its sustainability goals.

Based on the Administrative Working Group's experience with evaluating options, a more refined **Project Checklist** *(summarized here and included in **Appendix H**)* was developed to aid in future planning.

Note that the details for some items in the Plan are left blank, and these items are subject to continuing

| PROJECT CHECKLIST | |
|---|---|
| 1 | Anticipated timeline |
| 2 | Supports goals of the Plan |
| 3 | Net energy impact |
| 4 | Renewable energy |
| 5 | Waste profile |
| 6 | Water usage |
| 7 | Toxins or pesticides |
| 8 | Social responsibility |
| 9 | Environmental stewardship |
| 10 | Economic vitality |
| 11 | Community input |
| 12 | Sustainability leadership |

research, development and refinement as this Plan evolves.

**Plan is a Living, Working Draft**

This Plan will be kept as a living, working draft and will be improved, changed and revised over time, as more information becomes available to determine if the suggested strategies and actions are feasible and achievable. The initiatives listed in Appendix A constitute a starting point to initiate actions to reduce our carbon footprint and become a more sustainable county operationally.

As such, this draft working document has categorized the initiatives under three levels of implementation priorities.

Priority Level 1 strategies and actions are seen as achievable within 3 years.

Priority Level 2 strategies and actions are seen as achievable within 3-5 years.

Priority Level 3 strategies and actions are seen as achievable within 5-10 years.

**Process and Outcomes**

In order to consider and compose this Plan, the Administrative Working Group was convened for five one-half day meetings over a five-month period, as described below:

1. The first meeting in November 2012introduced members to the effort, defined the process and expectations, and established priorities for their particular work area (e.g., energy).
2. The second, in December 2012, refined the outcomes of the first meeting and reviewed the proposals from each of the departments and agencies.
3. The third, in January 2013, refined and adopted the Guiding Statements, and reviewed the action proposals with an eye to what was still missing.
4. The fourth, in February 2013, reviewed the detailed actions and metrics proposed, and produced a checklist for assessing proposals.

This information was supplemented with additional projects and actions from several departments, and then summarized at a fifth meeting in April 2013. The results were compiled into this "working draft" initiatives report which is meant to guide county operations over time and be improved as new ideas, suggestions and recommendations are vetted and better measurement indicators are developed.

**Setting Overall Goals**

Eight goals were identified with a target for achievement by 2023, or 10 years from Plan initiation. The 10-year timeline is intentionally aggressive due to the County's priority of achieving sustainability. The goals are listed below for each of the elements of green operations:

| | |
|---|---|
| **SAVE ENERGY** | |
| **Goal 1** | Reduce overall County electricity use from 2012 levels by 30% by 2023, using 2012 as a baseline. |
| **TRAVEL/DRIVE LESS AND DRIVE CLEAN** | |
| **Goal 2** | Reduce County fossil fuel transportation energy use by 50% by 2023, using 2012 as a baseline. |
| **USE GREEN ENERGY** | |
| **Goal 3** | Use green energy in place of energy derived from fossil fuels. |
| **SAVE WATER** | |
| **Goal 4** | Institute measures to better utilize water resources. |
| **RECYCLE AND CUT WASTE** | |
| **Goal 5** | Reduce paper waste and reuse paper whenever possible, recycle used paper, cardboard, plastics, metals, glass and other materials, and reduce use of disposables. |
| **BUY GREEN** | |
| **Goal 6** | Purchase green products and products with recycled content. |
| **BUILD GREEN** | |
| **Goal 7** | Utilize green building practices and materials for new County facilities. |

**ANTICIPATE CLIMATE CHANGE**

**Goal 8** Monitor and prepare for impacts of climate change and sea level rise on County facilities and operations.

These eight goals provide the compass points for the County's efforts. The metrics associated with each goal form a dashboard of indicators. Data will be collected and entered into this Plan document going forward. The County must exert considerable efforts and funding to improve data collection methodologies. Better metrics will generate more accurate results.

**IV. Refining the Goals, Determining the Plan Initiatives**

Using the guiding statement and principles established by the Administrative Working Group, the departmental and agency representatives refined the goals and developed metrics that would allow for measurement of progress toward achieving the goals.

The resultant consensus action plan *(summarized in **Table 1** below)* forms the beginning sustainability work program for the County. These initiatives are presented in greater detail in **Appendix A**.

It is important to note that some strategies may single out an agency or department. This was done purposely to maintain the integrity of the input process and to credit the agency or department for the suggested initiative (e.g. explore conversion to more sustainable alternatives for pesticides and herbicides…in all county Parks and Recreation facilities). However the vetting process and data collection effort to determine feasibility and subsequent action will be examined for county wide applications as well as specific to an agency or department. Participants were encouraged to be bold and propose initiatives that they believed could move the County to be more sustainable.

The initiatives listed in Appendix A will also be posted on the Office of Economic Development Share Point website and participants will be encouraged to provide comments on revising or improving initiatives or to propose entirely new initiatives. As stated, this process is designed to evolve over time and not be static.

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## TABLE 1: SUMMARY OF CLIMATE ACTIONS

### SAVE ENERGY

**Goal 1** **Reduce overall County electricity use by 30% by 2023 using 2012 as a baseline.**

| Lead: | OED/Energy | Partners: | All Departments |
|---|---|---|---|

**Strategy 1.1** Develop a comprehensive energy monitoring system across County facilities.

**Strategy 1.2** Establish a continuous commissioning program for major facilities and implement building retrofit programs where appropriate - starting with Police/CD/OPA at 3990 Ka`ana Street in Lihue.

**Strategy 1.3** Improve the County internal project review process to ensure energy efficiency.

**Strategy 1.4** Develop department-level energy reduction plans and identify and track key projects required to achieve energy savings goals.

**Strategy 1.5** Incorporate energy efficiency into the employee culture and ensure engagement by diverse participants in achieving goals.

**Strategy 1.6** Retrofit County streetlights with high efficiency technology such as LEDs and possible adaptive controls.

**Strategy 1.7** Replace or Convert lighting at Parks & Recreation facilities to energy efficient light fixtures.

| Lead: | Water | Partners: | PW |
|---|---|---|---|

**Strategy 1.8** Explore combining all water-related activities under one roof for greater efficiency.

**Strategy 1.9** Continue the exploration and development of horizontal wells to reduce energy use due to pumping.

### TRAVEL/DRIVE LESS AND DRIVE CLEAN

**Goal 2** **Reduce County fossil fuel transportation energy use from 2012 levels by 50% by 2023.**

| Lead: | Mayor's Office | Partners: | All Departments |
|---|---|---|---|

**Strategy 2.1** Minimize air travel using alternatives to in-person meetings or training.

**Strategy 2.2** Encourage County employees to carpool or take the bus to work.

**Strategy 2.3** Provide employees with and create awareness of information on how to drive more efficiently.

| Lead: | Public Works Auto/OED | Partners: | All Departments |
|---|---|---|---|

**Strategy 2.4** Establish fuel management protocols and policies to make the County's fleet more accountable for fuel efficiency.

**Strategy 2.5** Track per vehicle miles per gallon (mpg) and carbon footprint. Determine if vehicle can be replaced with more fuel efficient vehicle. If so, replace vehicle.

**Strategy 2.6** Establish and encourage use of loaner pool of fuel-efficient vehicles for offices assigned cars but do not use them regularly. Reassign possible surplus vehicles to agencies where employees currently use their own vehicles (need to conform to union agreements).

| Lead: | Transportation Agency | Partners: | OED, Public Works |
|---|---|---|---|

**Strategy 2.7** Explore the replacement or conversion of all buses that use diesel/gas over the next ten years so the County's entire fleet of buses runs on CNG, bio-diesel, and/or electricity.

**Strategy 2.8** Reduce expenditure of resources (fuel, non-revenue miles, staffing hours, vehicle maintenance requirements, etc.) by 5-10% through having satellite base yards on the North shore and the Westside to use for satellite bus storage/wash facilities.

| Lead: | Liquor Control | Partners: | Mayor's Office; Finance |
|---|---|---|---|

**Strategy 2.9** Convert from private vehicle use to fleet of hybrid vehicles for liquor inspectors.

**Strategy 2.10** Decrease fuel consumption through implementation of State law to purchase/lease hybrid and electric fleet vehicles, and consider grid interaction.

| Lead: | Police | Partners: | |
|---|---|---|---|

**Strategy 2.11** Explore modifying work schedules of those in a normal Administrative position to a "4/10" (four days/ten-hour day) work week to increase fuel and energy efficiency and decrease traffic congestion and utility usage (electricity/water).

## USE GREEN ENERGY

**Goal 3** **Use green energy in place of energy derived from fossil fuels.**

| Lead: | OED/Energy | Partners: | All Departments |
|---|---|---|---|

**Strategy 3.1** Install solar water heaters where appropriate.

**Strategy 3.2** Install photovoltaic net metering where appropriate.

| Lead: | Public Works/Solid Waste | Partners: | OED |
|---|---|---|---|

**Strategy 3.3** Implement landfill methane gas to energy program. Also consider methane for vehicle fuel use.

**Strategy 3.4** Continue exploration on development of other County waste streams to energy.

**Strategy 3.5** Collaborate with KIUC to maximize energy generation/storage potential at County facilities.

## SAVE WATER

**Goal 4** **Institute measures to better utilize water resources.**

| Lead: | PW-Building Div; Fire Dept.; Parks | Partners: | Planning, Water Dept. |
|---|---|---|---|

**Strategy 4.1** Explore policy to require fire sprinkler systems in all new construction.

**Strategy 4.2** Develop policy that maximizes reuse of grey water and water runoff in order to conserve potable water in County facilities.

**Strategy 4.3** Reduce & Minimize the use of Potable Water in all Parks & Recreation Facilities

## RECYCLE AND CUT WASTE

**Goal 5** **Reduce paper waste and reuse paper whenever possible, recycle used paper, cardboard, plastics, metals, glass and other materials, and reduce use of disposables.**

| Lead: | OED/Sustainability; Solid Waste | Partners: | Green Team, All Depts. |
|---|---|---|---|

**Strategy 5.1** Develop policies to reduce paper usage by 30% and ensure efficiency and accountability.

| Lead: | Public Works/Solid Waste | Partners: | Green Team, All Depts. |
|---|---|---|---|

**Strategy 5.2** Establish Virtual Reuse Room for new or slightly used office supplies, furniture and equipment

**Strategy 5.3** Recycle non-HI5 items along with HI5 items.

**Strategy 5.4** Create schedule for recycling and pick up of materials.

| Lead: | Public Works/Solid Waste | Partners: | All Depts. |
|---|---|---|---|

**Strategy 5.5** Promote culture change within all departments related to recycling.

**Strategy 5.6** Create a designated recycling area with sorting bins at each county agency.

| Lead: | Staff-Level Green Team | Partners: | All Departments |
|---|---|---|---|

**Strategy 5.7** Continue to encourage use non-disposable items for dishware, such as reusable plates, utensils, cups, glasses and containers.

## BUY GREEN

### Goal 6 Purchase green products and products with recycled content.

| Lead: | OED/Sustainability | Partners: | Purchasing |
|---|---|---|---|

**Strategy 6.1** Develop a list and specifications of recommended environmentally-friendly products and supplies and make the open bid list available to departments.

**Strategy 6.2** Work with other counties and State agencies to consider new alternative products and purchasing that considers economy of scale.

| Lead: | Purchasing, IT and OED/Sust. | Partners: | |
|---|---|---|---|

**Strategy 6.3** Track the emissions of the top 10 purchased products in order to better understand the supply chain.

| Lead: | Parks, Public Works | Partners: | |
|---|---|---|---|

**Strategy 6.4** Explore conversions to more sustainable alternatives for pesticides and herbicides, if cost effective, and use in a sustainable manner, and reduce the use of pesticides & herbicides in all County Parks & Recreation Facilities.

## BUILD GREEN

### Goal 7 Utilize green building practices and materials for new County facilities.

| Lead: | PW/Building Division | Partners: | OED/Energy |
|---|---|---|---|

**Strategy 7.1** Explore the ramifications of certifying existing County facilities using LEED specifications.

## ANTICIPATE CLIMATE CHANGE

### Goal 8 Monitor and prepare for impacts of climate change and sea level rise on County facilities and operations.

| Lead: | Planning | Partners: | All Departments |
|---|---|---|---|

**Strategy 8.1** Determine long-range impact from climate change (drought, flood, sea-level rise) and develop adaptations or mitigations related to County facilities and operations.

| Lead: | Water | Partners: | Planning/Public Works |
|---|---|---|---|

**Strategy 8.2** Determine long-range impact from sea level rise and water recharge on the water system.

## V. IMPLEMENTATION STRATEGY

In order to manage implementation of this Plan, the County has developed a supporting structure and implementation strategy. The goal is to provide ongoing management and leadership to ensure implementation of the Plan. The strategy is to create a system to monitor, analyze and report on progress in implementing the Plan.

Specific action commitments include:

1. Create a Point of Contact in each department.
2. Secure ad hoc input from departments to implement strategies on topics such as:
    - Policy and information management
        a. Communications and information sharing
        b. Plan monitoring and data collection system
        c. Data analysis and reporting
    - Energy
    - Green Products and Supplies
    - Construction and Maintenance Practices
3. Establish an annual reporting schedule and method(s) of reporting progress.
4. Use SharePoint or other means to share information about the Plan among departments.
5. Continue to seek practices, technologies and products to reduce fossil fuel use and increase the sustainability of County operations and facilities.

### Roles and Responsibilities

The Sustainability Manager and other designated departmental staff will coordinate and support implementation of the Sustainability Operations Plan, including maintaining and updating the emissions data, arranging and facilitating relevant meetings, supporting County staff in project implementation, and communicating aspects of program implementation to stake-holders, including County management, Mayor, County Council and the public. Many of these initiatives will require budget support.

The departments and agencies will implement the initiatives contained in the Plan which are approved and prioritized by the Administration. Key departmental liaisons will act as communication conduits with their department, oversee or conduct audits related to the Plan, manage projects, vet new ideas and submit decision requests to the Administration.

### Reporting

The goals and associated projects will be reviewed semi-annually to determine progress, if changes are needed in the initiatives, and with the sustainability effort undergoing a more comprehensive updating process every two years.

This Plan serves as the County's first annual Sustainability Report. Subsequent reports will detail

progress on the goals and projects as well as maintain historical trend data on the key metrics. Reporting will improve as better metrics are developed.

**Policy Development**

New sustainability policy proposals and strategies or improvements to previous initiatives may be submitted to the Sustainability Manager at any time. The format, schedule and process for the review process will be developed by the Sustainability Manager with ultimate review and approval by the Mayor.

**Communications**

At its first meeting, the Administrative Working Group considered how the County's sustainability efforts should be communicated to stakeholders. The intent was to present a clear, compelling and consistent rationale for why this makes sense to the County organization, and how it benefits the County's future ability to deliver services and to contribute to the health and livability of the Kaua`i community. **Table 2** below summarizes the Working Group's messaging about how sustainability benefits and impacts the various stakeholder groups.

**Table 2: Communication of Sustainability Value**

| To Government Partners | To Kaua`i Businesses | To County Council | To Employees | To Citizens |
|---|---|---|---|---|
| Makes us more accountable | Helps us manage increasingly limited resources. | Helps to solve problems and make positive community changes. | Creates a healthy work environment. | Ensures quality of life on Kaua`i. |
| Ensures good public relations for us all. | Makes Kaua`i more attractive to new business, talent, & customers. | Increases the island's economic and political independence. | Reduces the County's environmental impact. | Ensures our ability to provide services into the future. |
| Helps create a sustainable financial base. | Local sourcing helps local businesses. | Supports action addressing concern about sustainability issues. | Makes us more fiscally responsible. Aligns with employee values. | Results in economic benefits for this community |
| | | Makes the County more fiscally responsible, stable and sustainable. | Helps lead to sustainable jobs for future generations. | Fulfills our ethical obligation to future generations |

**VI. BEYOND COUNTY OPERATIONS**

This Plan is focused primarily on internal County operations and facilities, though some goals and projects necessarily affect the broader community due to the nature of County services and

policies. The intent is to ensure that the County actively pursues sustainability goals with an organized approach.

The County has a large operational footprint and employee base and it can have a significant positive impact in the community. This approach also harnesses the energy, creativity, dedication and expertise of County employees.

Going forward, the County will play a key role in community sustainability efforts, serving as a model to encourage broader action, and will help coordinate the planning, implementation and reporting of those efforts.

## APPENDIX A

# County of Kaua`i
# Operations Sustainability and Climate Action Plan
# FY 2014 to FY 2016

## MATRIX OF CLIMATE ACTION GOALS AND STRATEGIES

The matrix of goals and strategies presented on the following pages is organized into eight sections covering the core elements of climate action, including:

1. **Save Energy**
2. **Drive Less and Drive Clean**
3. **Use Green Energy**
4. **Save Water**
5. **Recycle and Cut Waste**
6. **Buy Green**
7. **Build Green**
8. **Anticipate Climate Change**

Within each section, specific goals and strategies are identified with a timeframe, lead and partnering department or agency, estimated cost, and metrics, together with detailed actions with timelines and primary responsibilities.

Details for some items are blank, and these items are subject to continuing development and refinement as this Plan evolves. Some initiatives and strategies may overlap with each other and these refinements will evolve over time as discussions continue and partnerships emerge internally. Better measurement and verification protocols developed over time will also help to highlight the achievements.

In the working group discussions, some specific initiatives and recommendations were attributed to specific agencies or departments. Although the vetting process will explore initiatives on a countywide basis, the suggestions were kept specific to honor and encourage the participants.

The Matrix highlights the current Implementation Priorities which is expected to change over time. Priority 1 strategies and projects are seen as achievable within 3 years; Priority 2 strategies and projects are seen as achievable within 3-5 years; and Priority 3 strategies and projects are achievable within 5-10 years.

This is the starting point of our efforts. Please encourage county participants, support their efforts and discuss your thoughts with them….as this effort to improve operational sustainability is just the first step in the County's journey to reduce its carbon footprint, reduce operations costs through increased efficiency and become a more responsible organization.

# SAVE ENERGY

**OFFICE OF ECONOMIC DEVELOPMENT**
**Action Strategy 1.1**

| | |
|---|---|
| **Goal 1** | Reduce overall County electricity use from 2012 levels by 30% by 2023* using 2012 as a baseline. |
| **Strategy 1.1** | Develop a comprehensive energy monitoring system across County facilities. **Implementation Priority 1.** |

| | |
|---|---|
| **Timeframe (From/To)** | January 2013 – July 2013 |
| **Lead Department or Agency** | Office of Economic Development/Energy |
| **Partnering Departments and Agencies** | All Departments |
| **Estimated Cost or Resources Needed** | Meter Level Data System - $15,000/yr. (year 1 free)<br>Staff resources TBD |
| **Metrics** | • All County electric meters monitored on monthly basis with capability to plot usage trends, project impacts, flag anomalies, set targets, etc.<br>• Key employed at all major facilities trained in use of system<br>• Ability to identify operational & equipment changes that impact energy use |

| **Actions** | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|
| 1. Identify a software application for County wide meter level data | Completed | OED |
| 2. Implement & evaluate software application and decide on continued use or change to other system. | Jan-July 2013 | OED |
| 3. Procure software system for continued use | Sept. 2013 | OED |
| 4. Continue system development including sub meter data, real-time data capture, and intermittent metering | Ongoing | OED |

| **Info/links** | **Description** |
|---|---|
| http://facilitydude.com/solutions/energy/utility-trac-plus/ | Application being piloted in 1st year for use by County |

# SAVE ENERGY

**OFFICE OF ECONOMIC DEVELOPMENT**
**Action Strategy 1.2**

| | |
|---|---|
| **Goal 1** | Reduce overall County electricity use from 2012 levels by 30% by 2023* using 2012 as a baseline. |
| **Strategy 1.2** | Establish a continuous commissioning program for major facilities and implement building retrofit programs where appropriate - starting with Police/CD/OPA at Kaana Street. *(Police Department examples - Reduce electrical energy lighting use by 50% within the next 5 years; replace lighting at all police stations with Light-Emitting Diode (LED) lamps or bulbs.)*<br>**Implementation Priority 1.** |

| | |
|---|---|
| **Timeframe (From/To)** | January 2013 – July 2014 |
| **Lead Department or Agency** | Office of Economic Development/Energy |
| **Partnering Departments and Agencies** | Public Works, Police, Civil Defense |
| **Estimated Cost or Resources Needed** | Retro-commissioning including additional sub metering & sensor installations across facility as needed- $50,000<br>Preliminary Budget for implementation of performance improvement measures identified by retro-commissioning - $50,000. Collaborate with KIUC's Energy Wise Program where appropriate. |
| **Metrics** | • Overall energy use at facility before & after retro-commissioning<br>• Operations & Maintenance costs before & after retro-commissioning<br>• Occupant comfort at facility before & after retro-commissioning |

| **Actions** | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|
| 1. Develop project goals, Identify & procure a retro-commissioning agent for the Project | August 2013 | OED, PW |
| 2. Complete Retro-commissioning project | January 2014 | OED, PW |
| 3. Implement recommendations | January 2014-July 2014 | PW, OED |

| **Info/links** | **Description** |
|---|---|
| http://www.peci.org/resources/library/retrocommissioning-guide-building-owners<br><br>www1.eere.energy.gov/.../commercial buildings factsheet_ retrocommissioning_stateandlocal.pdf | This comprehensive guide covers the business case for retro-commissioning and describes the process step-by-step, including key strategies for success, helpful resources, and an Appendix of templates and samples<br><br>SEE Action Network's retro-commissioning for State & Local Governments |

# SAVE ENERGY

**OFFICE OF ECONOMIC DEVELOPMENT**
**Action Strategy 1.3**

| | |
|---|---|
| **Goal 1** | Reduce overall County electricity use from 2012 levels by 30% by 2023* using 2012 as a baseline. |
| **Strategy 1.3** | Improve County internal project review process for energy efficiency. (Project is defined as a facility.)<br>**Implementation Priority 1.** |

| | |
|---|---|
| **Timeframe (From/To)** | July 2013 – January 2014 |
| **Lead Department or Agency** | Economic Development & PW Building Division |
| **Partnering Departments and Agencies** | Planning - CIP |
| **Estimated Cost or Resources Needed** | Staff time to improve review process & standards<br>Staff time to implement reviews |
| **Metrics** | • % of CIP building projects reviewed on-time<br>• Energy savings resulting from review process |

| **Actions** | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|
| 1. Review existing process for verifying energy performance of County projects | April 2013 | OED, PW |
| 2. Consider new internal design standards for County projects such as LEED or others | | |
| 3. Develop improvements to review process to assure projects meet standards | October 2013 | OED, PW |
| 4. Implement recommendations | Oct. 2013-March 2014 | PW, OED |

| **Info/links** | **Description** |
|---|---|
| | |

# SAVE ENERGY

**OFFICE OF ECONOMIC DEVELOPMENT**
**Action Strategy 1.4**

| | |
|---|---|
| **Goal 1** | Reduce overall County electricity use from 2012 levels by 30% by 2023* using 2012 as a baseline. |
| **Strategy 1.4** | Develop department-level energy reduction plans & identify and track key projects required to achieve energy savings goals.<br>**Implementation Priority 1.** |

| | |
|---|---|
| **Timeframe (From/To)** | January 2013 – January 2014 |
| **Lead Department or Agency** | Office of Economic Development/Energy |
| **Partnering Departments and Agencies** | All departments |
| **Estimated Cost or Resources Needed** | Staff time to develop Departmental Energy Reduction Plans (ERP's)<br>Staff time to track, implement, and update ERP's |
| **Metrics** | • of Departments that use ERP's as part of their project planning<br>• Energy savings resulting from ERP's |

| **Actions** | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|
| 1. Establish program & designate Departmental Energy reps for each Dept./Division | August 2013 | OED & Dept. Directors |
| 2. Complete Initial draft ERP's for major Dept's | November 2013 | OED & Dept. Reps |
| 3. Implement plan strategies | Ongoing | Designated agency |

| **Info/links** | **Description** |
|---|---|
| | |

# SAVE ENERGY

**OFFICE OF ECONOMIC DEVELOPMENT**
**Action Strategy 1.5**

| | |
|---|---|
| **Goal 1** | Reduce overall County electricity use from 2012 levels by 30% by 2023* using 2012 as a baseline. |
| **Strategy 1.5** | Incorporate energy efficiency into the employee culture and ensure engagement by diverse participants in achieving goals. *(Examples: Power down lights and equipment at the end of the day; phase out hot/cold water cooler/dispenser for a standing (not plugged) water dispenser and/or Brita; remove some unnecessary lighting; set air conditioner at a constant temperature and have temperature controlled by Public Works or designated department/person).* **Implementation Priority 1.** |

| | |
|---|---|
| **Timeframe (From/To)** | January 2013 forward |
| **Lead Department or Agency** | Economic Development |
| **Partnering Departments and Agencies** | All departments |
| **Estimated Cost or Resources Needed** | Staff time |
| **Metrics** | • Employee awareness level of County Energy Use<br>• Number of energy savings projects initiated by employees |

| **Actions** | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|
| 1. Provide quarterly energy updates to employees on County Energy Strategies & plans | Ongoing | OED |
| 2. Maintain website for employees | June 2013 | OED |
| 3. Implement 'awareness' programs for energy savings similar to the current refrigerator replacement program to engage County employees regarding energy use | Ongoing | OED |

| **Info/links** | **Description** |
|---|---|
| | |

**OFFICE OF ECONOMIC DEVELOPMENT**
**Action Strategy 1.6**

| | |
|---|---|
| **Goal 1** | Reduce overall County electricity use from 2012 levels by 30% by 2023* using 2012 as a baseline. |
| **Strategy 1.6** | Retrofit County Streetlights with high efficiency technology such as LED and possible adaptive controls.<br>**Implementation Priority 1.** |

| | |
|---|---|
| **Timeframe (From/To)** | January 2013-July 2014 |
| **Lead Department or Agency** | Economic Development |
| **Partnering Departments and Agencies** | Public Works and Kaua'i Island Utility Cooperative (Note: KIUC owns and maintains the streetlights and the County pays the bills.) |
| **Estimated Cost or Resources Needed** | Staff time<br>SL consultant - $15,000<br>Regulatory Cost - $TBD |
| **Metrics** | • Energy used (kWh) by streetlights annually<br>• Annual cost of streetlights including capital & O&M expense |

| **Actions** | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|
| 1. Develop draft implementation plan for streetlight change-out | Ongoing | OED |
| 2. Budget for & procure SL consultant to guide County in selection & implementation of project | Aug. 2013 | OED |
| 3. Address regulatory issues/tariff change with KIUC & PUC | Oct. 2013-Mar. 2014 | OED |
| 4. Finance & implement project | Mar. 2014-Oct. 2014 | OED |

| **Info/links** | **Description** |
|---|---|
| http://www1.eere.energy.gov/buildings/ssl/consortium.html | The DOE Municipal Solid-State Street Lighting Consortium shares technical information and experiences related to LED street and area lighting demonstrations and serves as an objective resource for evaluating new products on the market intended for street and area lighting applications. Cities, power providers, and others who invest in street and area lighting are invited to join the Consortium and share their experiences |

**DEPARTMENT OF PARKS AND RECREATION**
**Action Strategy 1.7**

| | |
|---|---|
| **Goal #1** | Reduce overall County electricity use from 2012 levels by 30% by 2023* using 2012 as a baseline. |
| **Strategy 1.7** | Replace or convert all lighting at Parks & Recreation facilities to energy efficient light fixtures, keeping in mind compliance with the Endangered Birds agreement with U.S. Fish and Wildlife.<br>**Implementation Priority 1.** |
| | |
| **Timeframe (From/To)** | July 2013 – December 2016 |
| **Lead Department or Agency** | Department of Parks & Recreation |
| **Partnering Departments and Agencies** | Finance, Purchasing, Public Works |
| **Estimated Cost or Resources Needed** | Funding of approximately $1,500,000 is needed over the projected conversion period. |
| **Metrics** | • Replace 50% of existing light fixtures by December 2015<br>• Replace 100% of existing light fixtures by December 2016 |

| | | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|---|
| **Actions** | 1. Complete inventory of all existing non-efficient light fixtures. | July 2014 | DOPR & DPW-Bldg |
| | 2. Develop a replacement or conversion schedule & budget for existing non-efficient light fixtures | June 2014 | DOPR & DPW-Bldg |
| | 3. Replace or convert 50% of non-efficient light fixtures | December 2015 | DOPR & DPW-Bldg |
| | 4. Replace or convert 100% of non-efficient light fixtures | December 2016 | DOPR & DPW-Bldg |

# SAVE ENERGY

**WATER DEPARTMENT**
**Action Strategy 1.8**

| | |
|---|---|
| **Goal 1** | Reduce overall County water use from 2012 levels by 10% by 2023* using 2012 as a baseline. |
| **Strategy 1.8** | Explore combining all water-related activities (Water and Wastewater) under one roof for greater efficiency.<br>**Implementation Priority 3.** |
| | |
| **Timeframe (From/To)** | Current to 5 years. |
| **Lead Department or Agency** | Water Dept. |
| **Partnering Departments and Agencies** | Public works, Water Board, Mayor, Charter Commission |
| **Estimated Cost or Resources Needed** | $200k |
| **Metrics** | |

| **Actions** | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|
| 1. Get Mayor and Water Board Acceptance of a process | 3 years | PW/Water |
| 2. Get Community acceptance | 1 year | PW/Water |
| 3. Put necessary changes on the Ballot | 1 year | Charter Commission |

| **Info/links** | **Description** |
|---|---|
| | |

# SAVE ENERGY

| WATER DEPARTMENT<br>Action Strategy 1.9 | |
|---|---|
| **Goal 1** | Reduce overall County electricity use from 2012 levels by 30% by 2023* using 2012 as a baseline. |
| **Strategy 1.9** | Continue the exploration and possible development of horizontal wells to reduce energy use due to pumping.<br>**Implementation Priority 3.** |
| | |
| **Timeframe (From/To)** | Current to 8 years |
| **Lead Department or Agency** | Water Dept. |
| **Partnering Departments and Agencies** | Community |
| **Estimated Cost or Resources Needed** | $50 million |
| **Metrics** | Cultural acceptance; engineering and hydrology studies |

| **Actions** | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|
| 1. Continue High Level Well project | 8 years | Water |
| 2. | | |
| 3. | | |

| **Info/links** | **Description** |
|---|---|
| | Develop high level water sources to eliminate pumping costs. Generate power from elevation drop. |

Project being reassessed by Water Dept.

# TRAVEL/DRIVE LESS & DRIVE CLEAN

| MAYOR'S OFFICE<br>Action Strategy 2.1 | |
|---|---|
| **Goal 2** | Reduce County fossil fuel transportation energy use from 2012 levels by 50% by 2023. |
| **Strategy 2.1** | Minimize air travel by using alternatives to in-person meetings or training. **Implementation Priority 1.** |
| | |
| **Timeframe** | July 2014 – June 2016 |
| **Lead Department** | Mayor's Office |
| **Partnering Depts.** | All Departments |
| **Estimated Cost or Resources Needed** | Manpower in the form of discussions and decision-making among the Mayor and his budget team to formulate a policy that will minimize air travel. |
| **Metrics** | • Number of off-island trips tracked versus baseline of fiscal year 2013 (July 1, 2012 – June 30, 2013)<br>• Number of passenger miles traveled versus baseline of fiscal year 2013 (July 1, 2012 – June 30, 2013)<br>• Number of meetings/conference attended electronically (webinar, teleconference, Skype, etc.) versus via air travel, in person. |

| **Actions** | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|
| 1. Mayor and budget team to formulate policy to minimize air travel for fiscal year 2014. Options to consider include reducing travel budgets for all departments and prohibiting or restricting transfer of funds into travel line-items except in cases of urgent need. | January 2013 – June 2013 | Mayor's Office |
| 2. Communicate new policy to department heads and all appropriate administrative personnel. Encourage meeting attendance via teleconference, webinar, Skype and other electronic means as an alternative. | Upon adoption of policy (July 1, 2013 or earlier) | Finance |
| 3. Track air travel throughout FY14 versus FY13. Track number of meetings participated in via electronic means. Reevaluate policy to determine if outcome was met. | July 2013 – January 2014 | Finance |
| 4. Refine policy to effectuate further reductions in FY15 | January 2014-June 2014 | Mayor's Office |
| 5. Communicate new policy to department heads and all appropriate administrative personnel. Encourage meeting attendance via teleconference, webinar, Skype and other electronic means as an alternative. | Upon adoption of policy (July 1, 2014 or earlier) | Finance |
| 6. Track air travel throughout FY15 versus FY14. Track number of meetings participated in via electronic means. Reevaluate policy to determine if outcome was met. | July 2014 – January 2015 | Finance |
| 7. Refine policy to effectuate further reductions in FY16 | January 2015-June 2016 | Mayor's Office |
| 8. Communicate new policy to department heads and all appropriate administrative personnel. Encourage meeting attendance via teleconference, webinar, Skype and other electronic means as an alternative. Upgrade video conferencing capabilities | Upon adoption of policy (July 1, 2015 or earlier) | Finance |

# TRAVEL/DRIVE LESS & DRIVE CLEAN

**ALL DEPARTMENTS**
**Action Strategy 2.2**

| | |
|---|---|
| **Goal 2** | Reduce County fossil fuel transportation energy use from 2012 levels by 50% by 2023. |
| **Strategy 2.2** | Encourage County employees to carpool or take the bus to work. **Implementation Priority 1.** |

| | |
|---|---|
| **Timeframe (From/To)** | Ongoing |
| **Lead Department or Agency** | All Departments |
| **Partnering Departments and Agencies** | Staff-level Green Team |
| **Estimated Cost or Resources Needed** | |
| **Metrics** | |

| **Actions** | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|
| 1. | Ongoing | SL-Green Team |
| 2. | | |
| 3. | | |

| **Info/links** | **Description** |
|---|---|
| | |

# TRAVEL/DRIVE LESS & DRIVE CLEAN

**ALL DEPARTMENTS**
**Action Strategy 2.3**

| | |
|---|---|
| **Goal 2** | Reduce County fossil fuel transportation energy use from 2012 levels by 50% by 2023. |
| **Strategy 2.3** | Provide employees with and create awareness of information on how to drive more efficiently.<br>**Implementation Priority 1.** |

| | |
|---|---|
| **Timeframe (From/To)** | TBD |
| **Lead Department or Agency** | All Departments |
| **Partnering Departments and Agencies** | |
| **Estimated Cost or Resources Needed** | None |
| **Metrics** | |

| **Actions** | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|
| 1. Coordinate with restructuring of county fleet | TBD | |
| 2. Include in new employee orientation and in refresher courses for existing employees. | | |
| 3. | | |

| **Info/links** | **Description** |
|---|---|
| | |

# TRAVEL/DRIVE LESS & DRIVE CLEAN

| PUBLIC WORKS AUTOMOTIVE/OED<br>Action Strategies 2.4 and 2.5 | | | |
|---|---|---|---|
| **Goal 2** | Reduce County fossil fuel transportation energy use from 2012 levels by 50% by 2023. | | |
| **Strategy 2.4** | Establish fuel management protocols and policies to make County's fleet more accountable for fuel efficiency.<br>**Implementation Priority 1.** | | |
| **Strategy 2.5** | Track per vehicle mpg and carbon footprint. Determine if vehicle can be replaced with more fuel efficient vehicle. If so, replace vehicle.<br>**Implementation Priority 1.** | | |
| **Timeframe (From/To)** | July 2013 – June 2015 | | |
| **Lead Department or Agency** | Public Works | | |
| **Partnering Departments and Agencies** | OED<br>Purchasing<br>Finance/IT | | |
| **Estimated Cost or Resources Needed** | Fuel Management System is being procured. | | |
| **Metrics** | • New fuel management system in place by 4th quarter calendar year 2013.<br>• Work with IT to collect fleet data and carbon data.<br>• Update county carbon footprint report | | |
| | | **Timeline for Completion** | **Primary Responsibility** |
| **Actions** | 1. Procure and initiate new fuel management tracking system | December 2013 | Public Works Automotive |
| | 2. Work with IT to collect per vehicle mpg data. | June 2014 | IT/OED |
| | 3. Work with Automotive to determine phase out of "fuel hogs" and replacement with fuel efficient vehicles | January 2014 | PW/OED |
| | 4. Set up vehicle replacement/procurement schedule with Automotive | June 2015 | Public Works Automotive |
| | 5. Procure fuel efficient vehicles. | January 2016 | Public Works Automotive |
| | 6. Evaluate carbon reduction and increased mpg | June 2016 | PW, IT and OED |

# TRAVEL/DRIVE LESS & DRIVE CLEAN

| PUBLIC WORKS AUTOMOTIVE/OED<br>Action Strategy 2.6 | | | |
|---|---|---|---|
| **Goal 2** | Reduce County fossil fuel transportation energy use from 2012 levels by 50% by 2023. | | |
| **Strategy 2.6** | Establish and encourage use of loaner pool of fuel-efficient vehicles for offices assigned cars but that do not use them regularly. Re-assign possible surplus vehicles to agencies where employees currently use their own vehicles (need to conform to union agreements, where applicable).<br>**Implementation Priority 1.** | | |
| **Timeframe (From/To)** | July 2013 – June 2014 | | |
| **Lead Department or Agency** | Finance, PW-Automotive and OED | | |
| **Partnering Departments and Agencies** | All Departments | | |
| **Estimated Cost or Resources Needed** | No funds required but need participation and buy-in by agencies to see where consolidation can occur. Existing surplus vehicles should be re-assigned. Pilot program with OED and PW-Solid Waste using EVs and Prius. | | |
| **Metrics** | • Track number of vehicle reductions<br>• Track number of inefficient vehicles removed from fleet.<br>• Determine savings achieved. Save here to fund another person or program. | | |
| | | **Timeline for Completion** | **Primary Responsibility** |
| **Actions** | 1. Discuss plan with Mayor and Administration for support. | July 2013 | OED/PW/Finance |
| | 2. Work with Auto Shop and all departments to determine how many vehicles can be assigned to common loaner pool. | December 2013 | OED/PW Auto/Finance |
| | 3. Work with Automotive to determine how many vehicles can be replaced, re-assigned or eliminated. | January 2014 | PW Auto/OED |
| | 4. Discuss with unions involved | March 2014 | Finance/Human Resources |
| | 5. Develop loaner pool reservation system and parking location tracker. | April 2014 | OED/IT/PW |
| | 6. Evaluate cost and fuel savings. | December 2015 | OED |

# TRAVEL/DRIVE LESS & DRIVE CLEAN

| TRANSPORTATION AGENCY<br>Action Strategy 2.7 | |
|---|---|
| **Goal 2** | Reduce County fossil fuel transportation energy use from 2012 levels by 50% by 2023. |
| **Strategy 2.7** | Explore replacement or conversion of all buses that use diesel/gas over the next ten years so the County's entire fleet of buses runs on CNG, bio-diesel, and/or electricity.<br>**Implementation Priority 1.** |
| | |
| **Timeframe (From/To)** | July 2013 – June 2016 |
| **Lead Department or Agency** | Transportation Agency/Public Works |
| **Partnering Departments and Agencies** | Finance, Purchasing, Public Works, Office of Economic Development, Private Industry |
| **Estimated Cost or Resources Needed** | CNG Fueling Facility - $2,000,000<br>CNG/Bio-Diesel Busses – 4 buses x 2 yrs @ $200,000 = $1,600,000<br>Electric Buses – 2 buses x 2 yrs @ $750,000 = $3,000,000<br>Bus Conversions – 5 buses x 2 yrs @ $20,000 = $200,000<br>Training of mechanics and drivers - $20,000 |
| **Metrics** | • 100% of buses replaced or converted to CNG/Bio-Diesel/Electricity by 2023<br>• Reduced carbon emissions from fleet annually starting in 2016, compared to 2010 baseline<br>• Anticipated savings/loss over the life of the new or converted vehicles |

| | | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|---|
| **Actions** | 1. Gather baseline carbon emissions data for 2010 for the fleet. | December 2013 | Transportation Agency |
| | 2. Develop a replacement or conversion schedule for the current fleet. | December 2013 | Transportation Agency |
| | 3. Develop specifications for buses to be purchased and for conversions of newer model buses purchased within the past two years | January 2014 | Transportation Agency |
| | 4. Establish CNG Refueling station in Kekaha, at the landfill; Partnerships with 3rd party fuel vendors for Bio-Diesel; Establish quick-charging stations in Kekaha and Hanalei | June 2014 | Public Works, OED, Private Industry |
| | 5. Train mechanics on how to repair and maintain the new CNG/Bio-Diesel engines | June 2014 | Transportation Agency, Bus Manufacturer |
| | 6. Implement schedule to replace buses, purchasing a percentage of new buses annually to replace retiring vehicles | July 2015, then annually | Transportation Agency, Purchasing |

| | | | |
|---|---|---|---|
| | 7. Implement schedule to convert newer model fossil fuel buses | July 2015, then annually until all newly purchased fossil fuel buses have been converted | Transportation Agency |
| | 8. Provide training to drivers of new buses on how to maximize efficiency. | September 2015 | Transportation Agency, Bus Manufacturer |
| | 9. Promote the use of CNG/Bio-Diesel/Electric buses to the public to gain their support. | July 2015, then at least quarterly | Transportation Agency, Public Information Officer |
| | 10. Evaluate success of CNG/Bio-Diesel/Electric bus project, including input from drivers, mechanics and riders, and analysis of cost/benefits | June 2016 | Transportation Agency |

# TRAVEL/DRIVE LESS & DRIVE CLEAN

| OFFICE OF THE MAYOR/TRANSPORTATION AGENCY<br>Action Strategy 2.8 | |
|---|---|
| **Goal 2** | Reduce County fossil fuel transportation energy use from 2012 levels by 50% by 2023. |
| **Strategy 2.8** | Reduce expenditure of resources (fuel, non-revenue miles, staffing hours, vehicle maintenance requirements, etc.) by 5% to 10% through having satellite base yards on the North shore and the Westside to use for satellite bus storage/wash facilities. **Implementation Priority 2.** |
| **Timeframe (From/To)** | July 2013-August 2015 |
| **Lead Department or Agency** | Transportation Agency |
| **Partnering Departments and Agencies** | Planning Department |
| **Estimated Cost or Resources Needed** | $800,000 total project cost |
| **Metrics** | 5% to 10% reduction in fuel usage, non-revenue miles, staffing hours, vehicle maintenance requirements |

| | | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|---|
| **Actions** | 1. Gather baseline data on non-revenue miles and the associated fuel usage, staffing hours, and maintenance cost with the non-revenue miles. | December 2013 | Transportation Agency |
| | 2. Work with Planning Department to identify potential locations for development on North Shore and West Side. | December 2013 | Transportation Agency |
| | 3. Provide costing for redevelopment, and resources needed at each of the locations (planning of logistics). | January 2014 | Transportation Agency |
| | 4. Research and secure funding for projects | April 2014 | Transportation Agency |
| | 5. Design/Build Procurement and Processing of agreements for the locations and resources. | September 2015 | Transportation Agency |
| | 6. Construction Phase | April 2016 | Transportation Agency |
| | 7. Relocation and implementation | August 2017 | Transportation Agency |

**DEPARTMENT OF LIQUOR CONTROL**
**Action Strategy 2.9**

| | |
|---|---|
| **Goal 2** | Reduce County fossil fuel transportation energy use from 2012 levels by 50% by 2023. |
| **Strategy 2.9** | Convert from using private vehicles to fleet of hybrid vehicles for liquor inspectors. **Implementation Priority 1.** |

| | |
|---|---|
| **Timeframe (From/To)** | TBD |
| **Lead Department or Agency** | Dept. of Liquor Control |
| **Partnering Departments and Agencies** | Finance, Mayor's Office, Council |
| **Estimated Cost or Resources Needed** | TBD after additional research. Liquor Funds will be used to purchase or lease vehicles. |
| **Metrics** | $ and gallons of fuel saved. |

| **Actions** | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|
| 1. Research vehicle usage and maintenance cost information from other depts. that have enforcement responsibilities. | December 2013 | Liquor |
| 2. Liquor Commission approval for purchase or lease | March 2014 | Liquor |
| 3. Issue purchase or lease solicitation | July 2014 | Liquor |

| **Info/links** | **Description** |
|---|---|
| | |

# TRAVEL/DRIVE LESS & DRIVE CLEAN

**DEPARTMENT OF LIQUOR CONTROL**
**Action Strategy 2.10**

| | |
|---|---|
| **Goal 2** | Reduce County fossil fuel transportation energy use from 2012 levels by 50% by 2023. |
| **Strategy 2.10** | Decrease fuel consumption through implementation of State law to purchase/lease hybrid and electric fleet vehicles, and consider grid interaction.<br>**Implementation Priority 1.** |

| | |
|---|---|
| **Timeframe (From/To)** | FY 2015 |
| **Lead Department or Agency** | Dept. of Liquor Control |
| **Partnering Departments and Agencies** | Finance, Mayor's Office and Council |
| **Estimated Cost or Resources Needed** | TBD |
| **Metrics** | |

| **Actions** | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|
| 1. Determine action based on results from Action Plan 2.6. | TBD | |
| 2. | | |
| 3. | | |

| **Info/links** | **Description** |
|---|---|
| | |

# TRAVEL/DRIVE LESS & DRIVE CLEAN

**POLICE DEPARTMENT**
**Action Strategy 2.11**

| | |
|---|---|
| **Goal 2** | Reduce County fossil fuel transportation energy use from 2012 levels by 50% by 2023. |
| **Strategy 2.11** | Explore modifying work schedules of those in a normal administrative position to a "4/10" (four days/ten hour day) work week to increase fuel and energy efficiency and decrease traffic congestion and utility usage (electricity/water). **Implementation Priority 2**. |

| | |
|---|---|
| **Timeframe (From/To)** | TBD |
| **Lead Department or Agency** | Police Dept. |
| **Partnering Departments and Agencies** | |
| **Estimated Cost or Resources Needed** | TBD |
| **Metrics** | |

| **Actions** | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|
| 1. TBD | | |
| 2. | | |
| 3. | | |

| **Info/links** | **Description** |
|---|---|
| | |

# USE GREEN ENERGY

**OED/ENERGY**
**Action Strategy 3.1**

| | |
|---|---|
| **Goal 3** | Use green energy in place of energy derived from fossil fuels. |
| **Strategy 3.1** | Install solar water heaters where appropriate.<br>**Implementation Priority 1.** |

| | |
|---|---|
| **Timeframe (From/To)** | |
| **Lead Department or Agency** | OED/Energy |
| **Partnering Departments and Agencies** | |
| **Estimated Cost or Resources Needed** | Possible ESPC project. |
| **Metrics** | |

| **Actions** | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|
| 1. | | |
| 2. | | |
| 3. | | |

| **Info/links** | **Description** |
|---|---|
| | |

| OED/ENERGY<br>Action Strategy 3.2 | |
|---|---|
| **Goal 3** | Use green energy in place of energy derived from fossil fuels. |
| **Strategy 3.2** | Install photovoltaic net metering where appropriate.<br>**Implementation Priority 1.** |
| | |
| **Timeframe (From/To)** | 3-1-13 to 6-30-16 |
| **Lead Department or Agency** | OED-Energy |
| **Partnering Departments and Agencies** | Public Works, Parks, Fire |
| **Estimated Cost or Resources Needed** | Fire Station examples: Kapa'a station; $100-130k, Līhu'e station; $200-250k, Kōloa station; $120-150k, Kalāheo station; $100-130k, Hanapēpē station; $100-130k, Waimea station; $150-180k, Hanalei station ?? Possible ESPC project. |
| **Metrics** | 90% reduction in purchased electricity |

| | | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|---|
| **Actions** | 1. Determine if new rules from KIUC regarding net metering will keep this action plan cost effective | June 1, 2014 | OED-Energy |
| | 2. Request bids for photovoltaic net metering on all Fire stations. | December 31, 2014 | OED-Energy |
| | 3. Install photovoltaic net metering on all Fire stations. | June 30, 2015 | OED-Energy |

# USE GREEN ENERGY

**PUBLIC WORKS/SOLID WASTE**
**Action Strategy 3.3**

| | |
|---|---|
| **Goal 3** | Use green energy in place of energy derived from fossil fuels. |
| **Strategy 3.3** | Implement landfill methane gas to energy program. Also consider using methane for fleet fuel use.<br>**Implementation Priority 1.** |

| | |
|---|---|
| **Timeframe (From/To)** | |
| **Lead Department or Agency** | Public Works/Solid Waste |
| **Partnering Departments and Agencies** | OED-Energy; Transportation; KIUC |
| **Estimated Cost or Resources Needed** | TBD after additional research |
| **Metrics** | |

| **Actions** | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|
| 1. Conduct research | December 2013 | OED Energy |
| 2. Get TA from EPA Landfill Methane Outreach Program. | December 2013 | OED Energy |
| 3. Secure consultant services | June 2014 | OED Energy |

| **Info/links** | **Description** |
|---|---|
| | |

# USE GREEN ENERGY

**PUBLIC WORKS/SOLID WASTE**
**Action Strategy 3.4**

| | |
|---|---|
| **Goal 3** | Use green energy in place of energy derived from fossil fuels. |
| **Strategy 3.4** | Continue exploration on development of other County waste streams to energy. **Implementation Priority 2.** |

| | |
|---|---|
| **Timeframe (From/To)** | |
| **Lead Department or Agency** | Public Works/Solid Waste |
| **Partnering Departments and Agencies** | OED-Energy |
| **Estimated Cost or Resources Needed** | |
| **Metrics** | |

| **Actions** | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|
| 1. | | |
| 2. | | |
| 3. | | |

| **Info/links** | **Description** |
|---|---|
| | |

**PUBLIC WORKS/SOLID WASTE**
**Action Strategy 3.5**

| | |
|---|---|
| **Goal 3** | Use green energy in place of energy derived from fossil fuels. |
| **Strategy 3.5** | Collaborate with KIUC to maximize energy generation/storage potential at County facilities.<br>**Implementation Priority 1.** |

| | |
|---|---|
| **Timeframe (From/To)** | |
| **Lead Department or Agency** | OED Energy<br>Public Works/Solid Waste |
| **Partnering Departments and Agencies** | |
| **Estimated Cost or Resources Needed** | |
| **Metrics** | |

| **Actions** | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|
| 1. | | |
| 2. | | |
| 3. | | |

| **Info/links** | **Description** |
|---|---|
| | |

**WATER DEPARTMENT**
**Action Strategy 4.1**

| | |
|---|---|
| **Goal 4** | Institute measures to better utilize water resources. |
| **Strategy 4.1** | Explore policy to require all new construction to have fire sprinkler systems installed.<br>**Implementation Priority 2.** |

| | |
|---|---|
| **Timeframe (From/To)** | Current to 7years |
| **Lead Department or Agency** | PW-Building Division |
| **Partnering Departments and Agencies** | Water, Planning, Fire, Kauai Association Contractors, County Council, Hawaii Fire Rating Underwriters Agency |
| **Estimated Cost or Resources Needed** | $100k staff time |
| **Metrics** | Get full community understanding of savings; risk management and safety aspects. |

| **Actions** | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|
| 1. Get fire rating Agency on Board | 1 years | Fire/Water |
| 2. Get KAC on board | 4 year | Water/Fire/PW |
| 3. Get fire and plumbing code changed | 1 year | Fire/PW |
| 4. Get Council on Board<br>County Council | 1 year | |

| **Info/links** | **Description** |
|---|---|
| | |

**WATER DEPARTMENT**
**Action Strategy 4.2**

| | |
|---|---|
| **Goal 4** | Institute measures to better utilize water resources. |
| **Strategy 4.2** | Develop policy that maximizes reuse of grey water and water runoff in order to conserve potable water in County Facilities.<br>**Implementation Priority 1.** |

| | |
|---|---|
| **Timeframe (From/To)** | Current to six years |
| **Lead Department or Agency** | PW-Building Division |
| **Partnering Departments and Agencies** | Water, Planning, Economic Development, State DOH |
| **Estimated Cost or Resources Needed** | Will be part of soon-to-be-adopted Building Code revision. |
| **Metrics** | |

| **Actions** | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|
| 1. Revise plumbing code | 1 years | Public Works/County Council |
| 2. Revise demand numbers for water infrastructure | 2-4 years | Water |
| | | |

| **Info/links** | **Description** |
|---|---|
| | |

Per soon-to-be adopted plumbing code, grey water systems are under the PW Building Division.

**DEPARTMENT OF PARKS AND RECREATION**
**Action Strategy 4.3**

| | |
|---|---|
| **Goal 4** | Institute measures to better utilize water resources. |
| **Strategy 4.3** | Reduce & Minimize the use of Potable Water in all County Parks & Recreation Facilities<br>**Implementation Priority 1.** |
| | |
| **Timeframe (From/To)** | July 2013 – December 2016 |
| **Lead Department or Agency** | Department of Parks & Recreation (DOPR) |
| **Partnering Departments and Agencies** | Finance, Purchasing, Public Works, DOW<br>Partnering Public & Private non-Potable Water Sources |
| **Estimated Cost or Resources Needed** | $600,000 (Auto Irrigation Controls, Auto Lavatory & Shower Timer Controls) |
| **Metrics** | • Install Public Shower Timer Controls at all DOPR Facilities<br>• Install Public Lavatory Timer Controls at all DOPR Facilities<br>• Install Automatic Irrigation Timer Controls at all DOPR Irrigation Systems<br>• Increase partnerships with Public & Private sources of Non-Potable Irrigation Water |

| | | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|---|
| **Actions** | 1. Conduct inventory & budget for Public Shower & Lavatory controls installation | July 2015 | DOPR & DPW-Bldg |
| | 2. Install Public Shower & Lavatory Controls at all DOPR Facilities | June 2016 | DOPR & DPW-Bldg |
| | 3. Conduct inventory & budget for DOPR Auto Irrigation Controls installation | July 2015 | DOPR |
| | 4. Install Automatic Irrigation Timer Controls at all DOPR Irrigation Systems | June 2016 | DOPR |
| | 5. Obtain Non-potable irrigation sources & systems where possible. | On going | DOPR |

# RECYCLE AND CUT WASTE

| OED/SUSTAINABILITY<br>Action Strategies 5.1 and 5.2 | | | |
|---|---|---|---|
| **Goal 5** | Reduce paper waste and reuse paper whenever possible, recycle used paper, cardboard, plastics, metals, glass and other materials, and reduce use of disposables. | | |
| **Strategy 5.1** | Develop policies to reduce 30% of paper usage and ensure efficiency and accountability.<br>**Implementation Priority 1.** | | |
| **Strategy 5.2** | Establish Virtual Re-use Room to promote countywide sharing of new or slightly used office supplies, office furniture and office equipment.<br>**Implementation Priority 1.** | | |
| | | | |
| **Timeframe (From/To)** | Ongoing | | |
| **Lead Department or Agency** | OED/Sustainability | | |
| **Partnering Departments and Agencies** | Staff Level Green Team, All Departments | | |
| **Estimated Cost or Resources Needed** | TBD | | |
| **Metrics** | | | |
| | | | |
| | | **Timeline for Completion** | **Primary Responsibility** |
| **Actions** | 1. Require double sided printing for all documents | Ongoing | All Depts. |
| | 2. Place recycle bins/boxes under each desk for easy access | Ongoing | PW Recycling |
| | 3. Establish a centralized recycle bin for single sided printing so paper can be reused for notepads or reprinting | Ongoing | All Depts. |
| | 4. Require reuse of all file folders and binders. | Ongoing | All Depts. |
| | 5. Encourage departments to load documents on electronic devices (such as tablets) when feasible, to reduce the volume of printed paper. | Ongoing | All Depts. |
| | 6. Send circulars and any interdepartmental mail via email whenever possible. | Ongoing | All Depts. |
| | 7. Develop programs and incentives to promote culture change in all departments and at all County facilities. | Ongoing | SL-Green Team<br>All Depts. |
| | 8. Develop Virtual Re-use Room and publicize web site location. Encourage Administrative personnel group to participate. | July 2013 | OED and All Depts. |

# RECYCLE AND CUT WASTE

| PUBLIC WORKS/SOLID WASTE<br>Action Strategies 5.3 & 5.4 | |
|---|---|
| **Goal 5** | Reduce paper waste and reuse paper whenever possible, recycle used paper, cardboard, plastics, metals, glass and other materials, and reduce use of disposables. |
| **Strategy 5.3** | Recycle non HI5 items along with HI-5 items.<br>**Implementation Priority 1.** |
| **Strategy 5.4** | Create schedule for recycling and pick up of materials.<br>**Implementation Priority 1.** |
| | |
| **Timeframe (From/To)** | Ongoing |
| **Lead Department or Agency** | Public Works/Solid Waste |
| **Partnering Departments and Agencies** | Staff Level Green Team, All Departments |
| **Estimated Cost or Resources Needed** | TBD |
| **Metrics** | |

| | | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|---|
| **Actions** | | | |
| | | | |
| | | | |
| | | | |

# RECYCLE AND CUT WASTE

| PUBLIC WORKS/SOLID WASTE<br>Action Strategies 5.5 & 5.6 | | | |
|---|---|---|---|
| **Goal 5** | Reduce paper waste and reuse paper whenever possible, recycle used paper, cardboard, plastics, metals, glass and other materials, and reduce use of disposables. | | |
| **Strategy 5.5** | Promote culture change within all departments related to recycling. **Implementation Priority 1.** | | |
| **Strategy 5.6** | Create a designated recycling area with sorting bins at each county agency. **Implementation Priority 1.** | | |
| | | | |
| **Timeframe (From/To)** | April 1, 2013 to June 30, 2014 | | |
| **Lead Department or Agency** | PW Recycling | | |
| **Partnering Departments and Agencies** | All Depts.<br>(Fire Station example presented in action timelines below) | | |
| **Estimated Cost or Resources Needed** | TBD | | |
| **Metrics** | Reduce waste by 30-40% | | |
| | | | |
| | | **Timeline for Completion** | **Primary Responsibility** |
| **Actions** | 1. Get a lead representative from each station to manage recycling. | August 30, 2013 | Fire |
| | 2. Get 6 trashcans and one compost bin to each of the 8 stations. | September 30, 2013 | Fire |

# RECYCLE AND CUT WASTE

**STAFF LEVEL GREEN TEAM**
**Action Strategy 5.7**

| | |
|---|---|
| **Goal 5** | Reduce paper waste and reuse paper whenever possible, recycle used paper, cardboard, plastics, metals, glass and other materials, and reduce use of disposables. |
| **Strategy 5.7** | Continue to encourage use of non-disposable items for dishware such as reusable plates, utensils, cups, glasses and containers. **Implementation Priority 1.** |
| | |
| **Timeframe (From/To)** | Ongoing |
| **Lead Department or Agency** | Staff-level Green Team project |
| **Partnering Departments and Agencies** | All Departments |
| **Estimated Cost or Resources Needed** | Donation of dishes/utensils |
| **Metrics** | |

| | | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|---|
| **Actions** | Loaner Kits available for use | June 2013. | PW Solid Waste |
| | | | |
| | | | |
| | | | |

Loaner kits available from Solid Waste (2 kits) and OED (1 kit).

# BUY GREEN

| OED/SUSTAINABILITY & PURCHASING<br>Action Strategy 6.1 | |
|---|---|
| **Goal 6** | Purchase green products and products with recycled content. |
| **Strategy 6.1** | Develop a list and specs of recommended environmentally-friendly products and supplies and make the open bid list available to departments.<br>**Implementation Priority 1.** |
| | |
| **Timeframe (From/To)** | TBD |
| **Lead Department or Agency** | OED Sustainability/Purchasing |
| **Partnering Departments and Agencies** | Janitorial Staff (for cleaning products) |
| **Estimated Cost or Resources Needed** | Research needed on acceptable products. |
| **Metrics** | |

| | | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|---|
| **Actions** | 1. Work with Janitorial Supervisor to review list of cleaning products to see if greener, more environmentally friendly products are available. | March 2014 | PW Janitorial<br>OED Sust. |
| | 2. Get samples and test products in real-use situations. Determine if cost and effectiveness of products meet county requirements. | March 2015 | |
| | 3. Work with Purchasing to procure via bid. | December 2015 | |
| | | | |

# BUY GREEN

| OED/SUSTAINABILITY<br>Action Strategy 6.2 | | | |
|---|---|---|---|
| **Goal 6** | Purchase green products and products with recycled content. | | |
| **Strategy 6.2** | Work with other counties and State agencies to consider new alternative products being offered and purchasing that considers economy of scale.<br>**Implementation Priority 2.** | | |
| | | | |
| **Timeframe (From/To)** | TBD | | |
| **Lead Department or Agency** | OED/Sustainability/Purchasing | | |
| **Partnering Departments and Agencies** | Janitorial Staff (for cleaning products) | | |
| **Estimated Cost or Resources Needed** | TBD | | |
| **Metrics** | | | |
| | | | |
| | | **Timeline for Completion** | **Primary Responsibility** |
| **Actions** | 1. Discuss with Purchasing if joint procurement is possible. | December 2014 | OED Sust. |
| | 2. Work with other counties and state agencies to see of new alternative green/recycled products are being purchased or tried on a trial basis.. | March 2015 | OED Sust. |
| | 3. Consider and test new alternative products. | December 2016. | OED Sust. And Janitorial Supervisor |
| | 4. If joint procurement is possible, work with other counties and state agencies to determine interest. | July 2017. | |

# BUY GREEN

**PURCHASING, IT & OED/SUSTAINABILITY**
**Action Strategy 6.3**

| | |
|---|---|
| **Goal 6** | Purchase green products and products with recycled content. |
| **Strategy 6.3** | Track the emissions of the top 10 purchased products in order to better understand the supply chain.<br>**Implementation Priority 2.** |
| | |
| **Timeframe (From/To)** | July 2013 to March 2014 |
| **Lead Department or Agency** | Purchasing, IT & OED/Sustainability |
| **Partnering Departments and Agencies** | All Departments |
| **Estimated Cost or Resources Needed** | |
| **Metrics** | |

| | | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|---|
| **Actions** | 1. Determine the top 10 purchased products via Finance/Purchasing | July 2014 | Finance/IT |
| | 2. Determine if alternate greener products and products with more recycled content can be substituted. | June 2014 | User Departments |
| | | | |
| | | | |

| PARKS AND RECREATION& PUBLIC WORKS<br>Action Strategy 6.4 | |
|---|---|
| **Goal 6** | Purchase green products and products with recycled content. |
| **Strategy 6.4** | Explore conversions to more sustainable alternatives for pesticides and herbicides, if cost effective, and use in a sustainable manner, and reduce the use of pesticides & herbicides in all County Parks & Recreation Facilities.<br>**Implementation Priority 1.** |
| **Timeframe (From/To)** | July 2013 – June 2016 |
| **Lead Department or Agency** | Department of Parks & Recreation |
| **Partnering Departments and Agencies** | Finance, Purchasing, Public Works |
| **Estimated Cost or Resources Needed** | $100,000 |
| **Metrics** | • Reduce Pesticide use by 25% by June 2015<br>• Reduce Pesticide use by 50% by June 2016 |

| | | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|---|
| **Actions** | 1. TRAINING. A) Increase knowledge of how the timing of pesticide applications can deduce the rates & volumes applied. B) Increase knowledge of the types of less toxic pesticide products available which can replace current products. C) Update staff knowledge of mixing and application procedures to minimize potential overuse of pesticides. | June 2014 | DOPR |
| | 2. Convert additional park acreage currently "grassed" with a wide variety of turf types to "Seashore Paspalum", reducing need for herbicide applications. | On-going | DOPR |

| PUBLIC WORKS/BUILDING DIVISION<br>Action Strategy 7.1 | | | |
|---|---|---|---|
| **Goal 7** | Utilize green building practices and materials for new County facilities. | | |
| **Strategy 7.1** | Explore the ramifications of certifying County facilities using LEED specifications. **Implementation Priority 2.** | | |
| | | | |
| **Timeframe (From/To)** | TBD | | |
| **Lead Department or Agency** | OED Energy and Public Works Building Division | | |
| **Partnering Departments and Agencies** | | | |
| **Estimated Cost or Resources Needed** | TBD | | |
| **Metrics** | | | |
| | | | |
| | | **Timeline for Completion** | **Primary Responsibility** |
| **Actions** | TBD | | |
| | | | |
| | | | |
| | | | |

| PLANNING DEPARTMENT<br>Action Strategy 8.1 | |
|---|---|
| **Goal 8** | Monitor and prepare for impacts of climate change and sea level rise on County facilities and operations. |
| **Strategy 8.1** | Determine long-range impacts from climate change and develop adaptations or mitigations related to County facilities and operations (drought, flood, sea level rise).<br>**Implementation Priority 3.** |
| | |
| **Timeframe (From/To)** | 25 years |
| **Lead Department or Agency** | Planning Dept. |
| **Partnering Departments and Agencies** | All Departments |
| **Estimated Cost or Resources Needed** | $500K $150 for rain fall study to be completed this next year; $350 for standard changes. |
| **Metrics** | |

| | | **Timeline for Completion** | **Primary Responsibility** |
|---|---|---|---|
| **Actions** | 1. Complete 50 year rainfall projection | 1 year | Water |
| | 2.Change Planning requirements | 20 years | Planning |
| | 3.Water Department change standards | 2 years | Water |
| | 4.Public Works change of standards | 2 years | Public Works |

| WATER DEPARTMENT<br>Action Strategy 8.2 | | | |
|---|---|---|---|
| **Goal 8** | Monitor and prepare for impacts of climate change and sea level rise on County facilities and operations. | | |
| **Strategy 8.2** | Determine long-range impacts from sea level rise and water recharge on the water system.<br>**Implementation Priority 3.** | | |
| | | | |
| **Timeframe (From/To)** | 25 years | | |
| **Lead Department or Agency** | Water Dept. | | |
| **Partnering Departments and Agencies** | All Departments | | |
| **Estimated Cost or Resources Needed** | | | |
| **Metrics** | | | |
| | | | |
| | | **Timeline for Completion** | **Primary Responsibility** |
| **Actions** | See Action Plan 8.1. | | |
| | | | |
| | | | |
| | | | |

**APPENDIX B**

# SYNOPSIS OF CARBON MANAGEMENT TRAINING PROCESS

**The County's departmental leadership has all participated in a series of seminars and working sessions that provided a comprehensive update on sustainability science and practice as it applies to Kaua`i. Our entire management team has been:**

- **Oriented to a systematic framework for sustainability thinking**
- **Briefed on the new tools for sustainability assessments**
- **Schooled in the specific sustainability challenges facing our island**

**With this new learning about sustainability, our managers have also explored an emerging consensus on our island's sustainability mission and strategic direction.**

**Among our best thinkers, there is broad agreement that we must accelerate our efforts in three areas:**

1. **Switch away from fossil fuels *(especially electricity, transport and food)***
2. **Plan for adaptation to climate change**
3. **Build up community initiative and resilience**

**How we are going to do this is what our leaders must tackle in the years ahead.**

## BOTTOM LINE:

**We live in a "carbon-constrained" world, and**
**21st Century managers have a "carbon kuleana".**

## *What gets measured gets managed*

**So the County is going to measure the "carbon footprint" of its operations, and assess the carbon emissions associated with its facilities, vehicles, purchases, waste, water and infrastructure investments.**

*Sustainability training provided by Ken Stokes of Island Matters LLC*

## Sustainability practice begins with a measurement exercise

**To assess the scope and scale of our sustainability challenge, we have begun a measurement process to quantify the carbon footprint from our operations in order to establish a baseline for our current emissions and to identify major sources.**

**We are pursuing this on a department-by-department basis, and we anticipate that each department will have an annual "carbon budget" alongside its financial budget.**

**We also expect these metrics to help us set new goals for emissions reductions and to evaluate alternative plans for realizing these reductions most effectively.**

**Ken Stokes has been asked to provide training and technical assistance for our management team in these areas, and we hope to have preliminary data in a few months. He will also help our management team explore the challenges of sustainability leadership in a carbon-constrained world, and engage their workforce and stakeholders in sustainability initiatives.**

**Results so far:**

1. **Executive directives by the Mayor regarding exploration of sustainability practices have created an openness across the management team to tackling the carbon challenge.**
2. **There is a reasonably high level of awareness of sustainability issues at all levels of each department, and the farther down into staff ranks you go, the 'greener' it gets.**
3. **There is broad support for launching a carbon measurement exercise that will logically lead to setting emissions reduction targets and launching carbon management initiatives.**

**Moreover, the County is not just raising the bar in its own operations; it is also beginning to promote our "carbon kuleana" with businesses, landowners, and community groups, and support more institutional collaboration.**

# APPENDIX C

## Sustainability Team Structure

1. **Role of the Sustainability Manager:** The Sustainability Manager will coordinate, support and facilitate the implementation of the Operations Sustainability and Climate Action Initiatives as developed by the Administrative Working Group. The Sustainability Manager will provide technical assistance, which may include research, development of procurement documents, and coordination of different agencies with common goals and objectives, and potential funding support via grant applications. In some cases, the Sustainability Manager will be the lead for implementation of specific strategies and projects. The Sustainability Manager will also function as a direct link to the Mayor and his administrative team for action initiative review and policy decisions.

2. **Administrative Working Group:** The Administrative Working Group was convened by the Mayor and the Sustainability Manager to develop a County Operations Sustainability and Climate Action Plan. In time, a high level Administrative Green Team is envisioned, consisting of key department leaders who will be responsible for the timely implementation of the action plans and strategies under their jurisdiction, including those that need further study and/or those that may require longer development time lines. Administrative Green Team Working Groups may be formed by various departments, divisions and agencies for projects that are multi-jurisdictional. Formation of the Administrative Green Team is expected by late 2013.

3. **Role of the Staff-level Green Team:** The Staff-level (SL-) Green Team is comprised of the early adopters/proactive supporters of specific actions that result in a more efficient and sustainable County. The original SL-Green Team was formed in February 2012. SL-Green Team members have direct communications with their peers and are key drivers in institutionalizing sustainability as a County value. SL-Green Team members may propose and initiate projects and activities that promote sustainability with the Mayor's approval. Membership is voluntary and open to all interested county workers, with the approval of their respective department or agency directors. SL-Green Team meetings are held monthly.

Staff-Level Green Team Members (as of April 2013):

Mary Daubert, Mayor's Office
Cindy Duterte, Parks and Rec.
Allison Fraley, PW-Solid Waste
Brian Inouye, PW-Building Div.
Lea Kaiaokamalie, Planning
Laura Kelley, PW-Solid Waste
Jeremy Lee, Transportation
Emily Medeiros, PW-Solid Waste
Carrie Moses, Finance-Purchasing
Glenn Sato, OED-Sustainability

Ben Sullivan, OED-Energy
Mandi Swanson, Finance-Inf. Tech.
Eddie Topenio, Council Services

4. Administrative Green Team:

   To Be Determined

# APPENDIX D

## Government Operations Inventory of Greenhouse Gases
## Calendar Years 2007-2011

### DATA COLLECTION

Similar to many municipalities, the county's data sets are incomplete and could use major improvements. Add limited staff time and resources to that equation and one wonders how even the most simple emissions inventory is possible. Fortunately, County operations are not complex and most of the facilities' electrical use information is quite extensive due to assistance from the Kaua'i Island Utility Cooperative.

Most of the data gaps were related to fuel use records, which, looking forward, are being addressed with the upcoming purchase of a new fuel management system. The County used bulk fuel purchases to calculate emissions due to fuel use for its initial carbon footprint report. Solid waste landfill information obtained was also very good, due to ongoing monitoring required by U.S. EPA and State Dept. of Health regulations regarding landfills. It was also due to the County's efforts at waste diversion and extensive recycling programs to prolong the life of the Kekaha landfill, until a new landfill location is sited, planned and begins operations.

### EMISSIONS REDUCTION STRATEGY

Although this government operations emissions inventory distills the data down to carbon dioxide equivalents (C02e), most people do not relate to carbon emissions and C02equivalents. Most people understand kilowatt hours (kWh) or miles per gallon as it relates to cost per unit of electricity or cost per gallon of fuel because they deal with these measures on a daily basis. This report is specifically written for the lay-person. Although the County intends to report greenhouse gas emissions related to County operations, it is important to present the data used to arrive at C02 equivalents so those County employees that can impact the baseline understand the relationship between greenhouse gas emissions and the more commonly used metrics they may be more familiar with.

### GOVERNMENT OPERATIONS ENERGY AND CARBON EMISSIONS FOCUS AREAS

Local governments exercise direct control over their own actions that result in GHG emissions, and can significantly achieve GHG reductions and cost savings by internally reducing energy and fuel usage as well as the amounts of waste going to the landfill. In collecting data relating to government operations, the County looked at the following areas:

- Buildings and related facilities
- Streetlights and traffic signals
- Water facilities
- Wastewater facilities
- Solid Waste facilities
- Vehicle fleet
- Transit fleet
- Employee commute

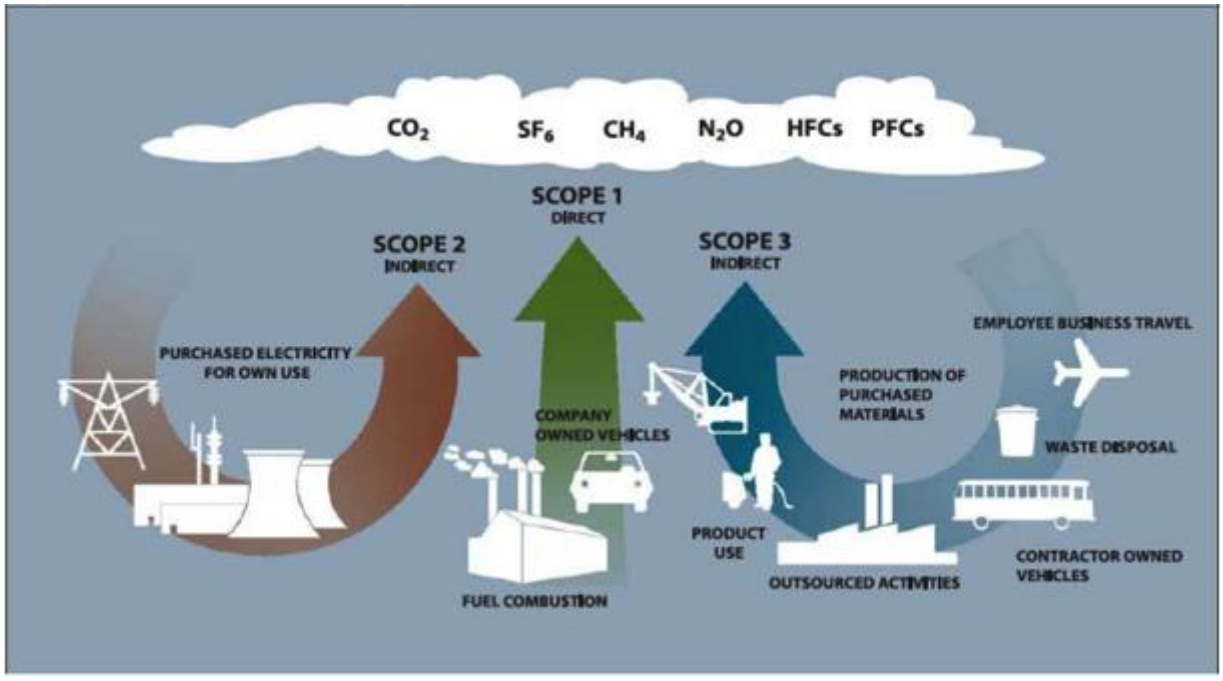
Many GHG inventory protocols classify emissions sources and activities as producing either direct or indirect GHG emissions. The GHG Protocol used by the County defines direct and indirect emissions as follows:

- Direct GHG emissions are emissions from sources that are owned or controlled by the County.
- Indirect GHG emissions are emissions that occur because of County actions, but the direct source of emissions is owned or controlled by a separate entity.

The GHG Protocol further categorizes these direct/indirect emissions into three broad scopes[1]:

- **Scope 1:** Direct emissions from sources within the County of Kaua'i's operations that it owns or controls. This includes direct GHG emissions, such as from County-owned vehicles.
- **Scope 2:** Indirect emissions associated with the consumption of electricity, heating, cooling or steam that is purchased from an outside utility.
- **Scope 3:** All other emissions sources that hold policy relevance to the local government that can be measured and reported. This includes all indirect emissions not covered in Scope 2 that occur as a result of activities within the operations of local government. Includes other indirect emissions, such as the extraction and production of purchased materials and fuels, transport-related activities in vehicles not owned or controlled by the County (employee commute), electricity-related activities (e.g. T&D losses) not covered in Scope 2, outsourced activities, waste disposal, etc.

**FIGURE 1**




[1] ICLEI Local Governments for Sustainability. July 2011. Local Government Operations Greenhouse Gas Emissions Inventory Instructions. Part 1: Data Gathering and Quality Control of the Master Data Workbook.

Figure 1 above illustrates the different types of scopes used by the County to characterize the GHG emissions inventory results and target areas for reductions. This information also shows the areas where data collection improvements could occur to expand the County's tracking activities and identify opportunities to lower its carbon emissions. The County lacks sufficient compiled data to determine most Scope 3 emissions. These are needed areas of improvement that could include, for example, upgraded software, new vendor requirements and improved data collection protocols.

## COUNTY EMISSIONS BASELINE

The County's emissions study used Calendar Year 2007 as a baseline. In that year, County of Kaua'i operations produced an estimated 20,265 metric tons of C02e from direct emissions, primarily from County-owned vehicles, indirect emissions from purchased electricity and indirect emissions from employee commutes.

This inventory follows the emissions measurement protocol for local government operations that has been consensually adopted by ICLEI and The Carbon Registry.

The Emissions Inventory for the County of Kaua'i was produced by consultant Ken Stokes from Island Matters LLC using data collected by the Office of Economic Development and provided by the respective agencies and departments.

## OVERVIEW OF EMISSIONS INVENTORY RESULTS FOR THE COUNTY OF KAUA`I, 2007-2011

The County's emissions inventory quantifies the greenhouse gases generated by the usage of electricity and fuels in government operations. Commonly accepted emissions factors are associated with each kilowatt-hour (kWh) of electricity and gallon of gasoline or diesel fuel, and these amounts are tabulated for each major County government function and expressed in metric tons of carbon dioxide equivalents (MTC02e).

In 2007, the County used a combined total of 19.8 gigawatt-hours of electricity and more than 700,000 gallons of fuel which generated a combined total of approximately 20,265 MTC02e, which was distributed across government functions as shown in the pie chart Figure 2.

Comparable operations data was compiled for each of the following four years from the benchmarked year 2007 (when the State of Hawai'i updated its comprehensive emissions inventory).

**FIGURE 2**

Total county emissions climbed from 20,265 MTC02e in 2007 to 21,234 MTC02e in 2011, as shown in Summary Table A below. Complete Year 2007 to 2011 data and calculation methodologies are presented in the Addendum on page D13.

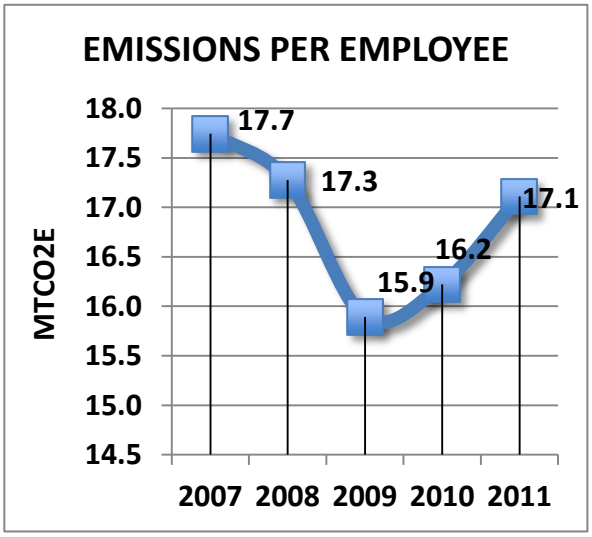
**Summary Table A**

| | Metric Tons of Carbon Dioxide Equivalents (MTCO2e) | | | | |
|---|---|---|---|---|---|
| | 2007 | 2008 | 2009 | 2010 | 2011 |
| ***TOTAL EMISSIONS*** | ***20,265*** | ***19,679*** | ***19,338*** | ***19,400*** | ***21,234*** |
| ***BY SOURCE*** | | | | | |
| Electricity | 13,702 | 13,200 | 12,630 | 12,877 | 12,482 |
| Fuels | 6,562 | 6,479 | 6,709 | 6,524 | 8,752 |
| ***BY FUNCTION*** | | | | | |
| Buildings and Facilities | 3,674 | 3,850 | 3,669 | 3,596 | 3,694 |
| Streetlights & Traffic Signals | 1,293 | 1,279 | 1,250 | 1,231 | 1,259 |
| Water Delivery Facilities | 5,699 | 5,151 | 4,803 | 5,110 | 4,637 |
| Wastewater Facilities | 3,008 | 2,896 | 2,886 | 2,913 | 2,865 |
| Solid Waste Facilities | 29 | 23 | 22 | 27 | 27 |
| Vehicle Fleet | 3,309 | 3,266 | 3,386 | 3,171 | 5,081 |
| Bus Fleet | 1,218 | 1,308 | 1,415 | 1,486 | 1,759 |
| Employee Commute | 2,036 | 1,905 | 1,908 | 1,867 | 1,912 |
| ***PER EMPLOYEE*** | | | | | |
| FTE Employees * | 1,142 | 1,139 | 1,217 | 1,196 | 1,241 |
| ***MTCO2e/FTE*** | ***17.7*** | ***17.3*** | ***15.9*** | ***16.2*** | ***17.1*** |

* *Full-Time Equivalent employees as reported in the County's Comprehensive Annual Financial Report (CAFR)*

On a per-employee basis, County emissions have ranged between 16 and 18 MTC02e over this five year period as shown in Figure 3.

**FIGURE 3**




The emissions trend chart (on page 20) shows the trends for electricity and fuel as well as the emissions sources by government function. A detailed table of emissions is provided for each year (pages 27 to 31).

A comparison of emission sources for 2007 and 2011 are provided in Figure 4 and the trends for electricity and fuel purchases for these same periods are illustrated in Figure 5.

Specific annual breakdowns are provided in the emissions charts below.

**FIGURE 4**

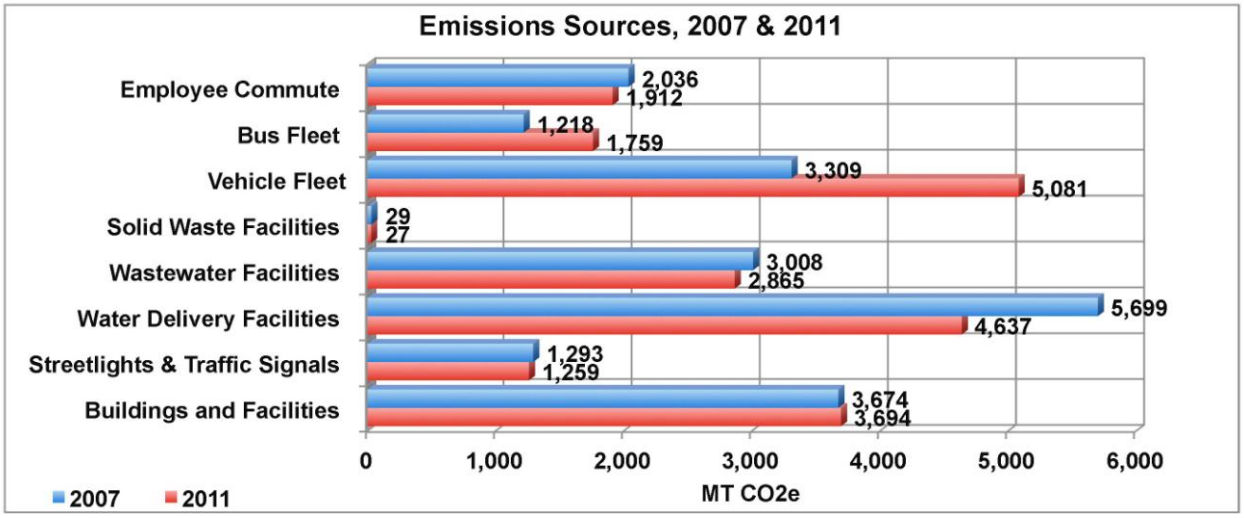
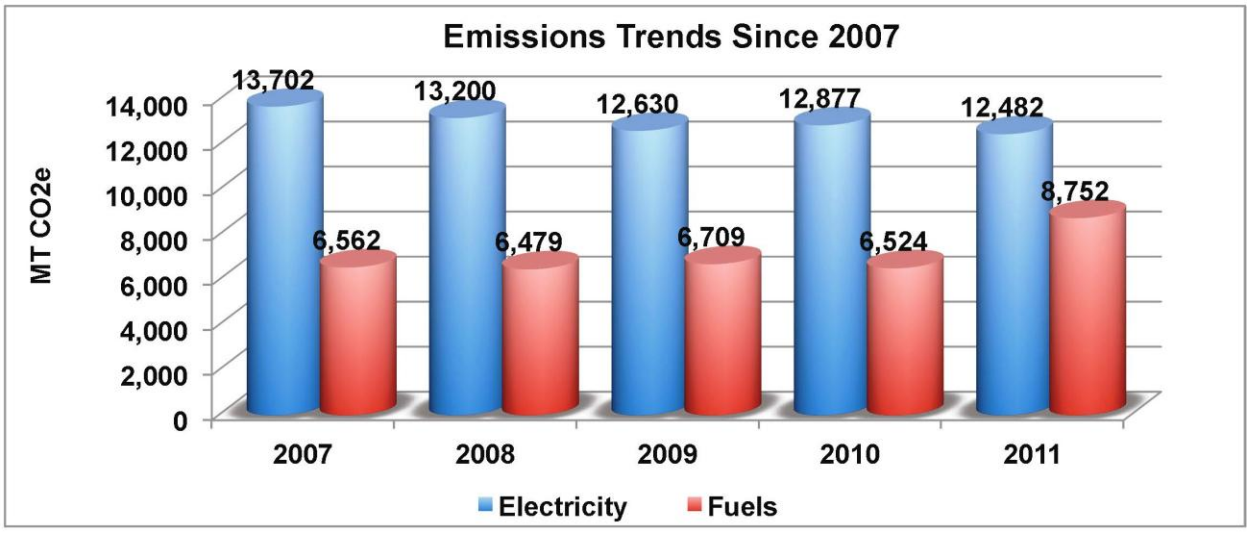



**FIGURE 5**



**IMPORTANT 2007 BASELINE YEAR FINDINGS**

1. County of Kaua'i government operations were responsible for 20,265 metric tons of C02e primarily from direct emissions from County-owned vehicles; indirect emissions from electricity purchased from KIUC; and indirect emissions from employee commutes in CY 2007, equivalent to 47,128 barrels of oil[2]. Government emissions by sector are presented in Figure 2 above.
2. The largest source of direct GHG emissions (Scope 1) comes from the County's vehicle fleet.
3. The County spent over $7.1 million dollars on electricity in CY 2007, representing over 19.7 million kWh of electricity, generating 13,702 metric tons of Scope 2 (indirect) C02e. Indirect emissions from County facilities accounted for 67.6% of GHG emissions.
4. The largest departmental source of indirect Scope 2 GHG emissions (of the total 67.6%) came from Department of Water operations, accounting for 5,699 metric tons of C02e, representing 28.1 % of total local government indirect Scope 2 emissions.

**DETAILED FINDINGS**

This section describes where the data was collected and the basic methodology, assumptions and level or reliability for each emissions source.

**Buildings and Facilities**

The County owns, manages and maintains over 100 buildings and facilities with approximately 700,000 square feet of space to support County operations. Combined, in 2007 these facilities used 5,303,813 kWh of electricity at a cost of $1,911,063. The electricity used translated into the release of 3,674 metric tons of C02e. Buildings and facilities constitute 18.1% of total emissions. The County does not self-generate any electricity using fossil fuels.

**Streetlights and Traffic Signals**

KIUC owns and maintains over 2,900 streetlights and traffic signals along County roadways but the streetlight bill is paid for by the County. The vast majority of streetlights are 100-watt high-pressure sodium lamps with some 150 and 250 watt lamps at street intersections. In CY 2007, the County's streetlight and traffic signals used 1,865,960 kWh of electricity which cost $908,632. Traffic signals make up 6.4% of total emissions.

[2] EPA (2007).Inventory of U.S. Greenhouse Gas Emissions and Sinks: Fast Facts 1990-2005. Conversion Factors to Energy Units (Heat Equivalents) Heat Contents and Carbon Content Coefficients of Various Fuel Types.U.S. Environmental Protection Agency, Washington, DC. USEPA #430-F-07-002 (PDF)(2 PP. 190K, About PDF).
EPA (2010).Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2008. Annex 2 (Methodology for estimating C02 emissions from fossil fuel combustion), P. A-58. U.S. Environmental Protection Agency, Washington, DC.U.S. FPA #430-R-I 0-006 (PDF) (407 PP. 19MB, About PDF).
IPCC (2006).2006 IPCC Guidelines for National Greenhouse Gas Inventories.Intergovernmental Panel on Climate Change, Geneva, Switzerland.

**Water Delivery Facilities**

The Kaua'i County Department of Water is a semi-autonomous agency that monitors, operates, and maintains 50 deep well pumping stations, 19 booster pumping stations along with its associated electrical motor control centers and chlorination disinfection equipment, 4 tunnel sources, 58 storage tanks, 75 control valve stations, and over 400+ miles of pipeline to approximately 20,000 consumer water service connections and meters.

All functions necessary to collect, treat, and distribute potable water from the source to the tap are performed by the Department's staff of75, as well as most support functions, including accounting, billing, customer service, engineering, planning and procurement. The Department operates as a semi-autonomous enterprise department of the County of Kauai, under the direction of the Board of Water Supply. The Department derives all of its revenue from water sales with no direct subsidy from, or contributions to, the County General Fund.

In CY 2007, the Water Dept. spent $2,887,419 by consuming 8,227,745 kWh of electricity, which contributed to 5,699 metric tons of C02e emissions from water operations. Water delivery facilities account for 28.1% of total emissions.

**Wastewater Delivery Facilities**

The Division of Wastewater Management under the Department of Public Works manages and administers the sewer user charge system and reviews subdivision construction plans and non-residential building permit plans where municipal service is available. The Wastewater Division also operates, maintains and repairs all County wastewater collection, treatment and disposal facilities in order to provide consistent and reliable performance to protect health and the environment. There are four main wastewater treatment facilities located at Wailua, Lihu'e, 'Ele'ele and Waimea. The four facilities and related infrastructure were responsible for the release of over 3,000 metric tons of C02e in CY2007 from the consumption of 4,342,410 kWh of electricity at a cost of $1,397,946. Wastewater delivery facilities account for 14.8%of total emissions.

**Solid Waste Facilities**

The Division of Solid Waste under the Department of Public Works has offices at the Lihu'e Civic Center and the Kaua'i Resource Center. Solid Waste facilities account for only 0.1 % of total emissions from purchased electricity. At this time, the County does not have sufficient data to calculate the collection and disposal of waste generated from County operations, which would fall under Scope 3, indirect sources of C02e.

**Vehicle Fleet**

The County and the Department of Water owns and operates approximately 418 vehicles, including a mix of cars, trucks, vans, specialized vehicles such as police cars and fire trucks, and

construction-related equipment such as loaders, backhoes, mowers, etc. The County and Dept. of Water spent $1,102,394 for 349,149 gallons of diesel and gasoline. The County and Dept. of Water's vehicle fleet accounted for 16.3% of total emissions.

**Transit Fleet**

The County's Transportation Agency provides both public bus service and specialized door-to-door, para-transit service. In 2007-2008, the transit fleet consisted of 43 buses, 4 vans and 4 cars, contributing 1,218 metric tons of C02e from the use of 119,280 gallons of primarily diesel and some gas. Fuel costs totaled $374,172. The County's bus transit fleet accounted for 6% of total emissions.

**Employee Commute**

An employee commute survey was distributed and completed in 2011 by 284 employees or 23% of the total workforce. The survey showed that the average employee drives 80 miles per week; 88% used their own car, 7% carpooled, 4% rode the bus and 1% participated in Park 'n Ride. The 80 miles per week driving information was used to determine that employee commute accounted for 2,036 metric tons ofC02e emissions or 10.1% of total County operations emissions.

**TABULAR RESULTS FOR 2007-2011**

The tables on the following pages present the detailed measures used to compile this emissions inventory, including the quantity and cost of fuels and electricity by source and the associated emissions.

## COUNTY OF KAUA`I EMISSIONS 2007

| | | *kWh* | *Gallons* | *Metric Tons* | Share of Emissions |
|---|---|---|---|---|---|
| | **Cost** | **Energy Use** | **Fuel Use** | **CO2e** | |
| Buildings and Facilities | $1,911,063 | 5,303,813 | | 3,674 | 18.1% |
| Streetlights & Traffic Signals | $908,632 | 1,865,960 | | 1,293 | 6.4% |
| Water Delivery Facilities | $2,887,419 | 8,227,745 | | 5,699 | 28.1% |
| Waste Water Facilities | $1,397,946 | 4,342,410 | | 3,008 | 14.8% |
| Solid Waste Facilities | $20,422 | 42,079 | | 29 | 0.1% |
| **Facilities Energy** | **$7,125,481** | **19,782,007** | | **13,702** | **67.6%** |
| **Vehicles Fleet**** | **$1,102,394** | | **349,149** | **3,309** | **16.3%** |
| ACD* Gsl | $487,446 | | 155,375 | 1,364 | 6.7% |
| ACD* Dsl | $470,016 | | 159,371 | 1,627 | 8.0% |
| BWS* Gsl | $70,228 | | 23,813 | 209 | 1.0% |
| BWS* Dsl | $74,705 | | 10,591 | 108 | 0.5% |
| **Bus Fleet** | **$374,172** | | **119,280** | **1,218** | **6.0%** |
| TA* Gsl | $547 | | 186 | 2 | 0.0% |
| TA* Dsl | $373,625 | | 119,094 | 1,216 | 6.0% |
| **Employee Commute***** | **$683,853** | | **231,878** | **2,036** | **10.0%** |
| **TOTAL** | **$10,762,467** | **19,782,007** | **700,307** | **20,265** | **100.0%** |

** ACD = All County Departments; BWS = Board of Water Supply; TA = Transportation Agency; Gsl = gasoline; Dsl = Diesel*

*** Estimated calculation based on best available information. Vehicle fleet includes Board of Water Supply*

**** Assumes 19.7 MPG average at $2.95/gal for 1,142 employees commuting 80 mi/wk average*

**COUNTY OF KAUA`I EMISSIONS 2008**

| | | *kWh* | *Gallons* | *Metric Tons* | Share of Emissions |
|---|---|---|---|---|---|
| | **Cost** | **Energy Use** | **Fuel Use** | **CO2e** | |
| Buildings and Facilities | $2,549,530 | 5,657,458 | | 3,850 | 19.1% |
| Streetlights & Traffic Signals | $1,084,879 | 1,879,996 | | 1,279 | 6.5% |
| Water Delivery Facilities | $3,566,496 | 7,569,430 | | 5,151 | 25.0% |
| Waste Water Facilities | $1,744,253 | 4,255,954 | | 2,896 | 15.0% |
| Solid Waste Facilities | $20,273 | 34,175 | | 23 | 0.1% |
| **Facilities Energy** | **$8,965,431** | **19,397,013** | | **13,200** | **65.7%** |
| **Vehicles Fleet**** | **$1,286,243** | | **343,872** | **3,266** | **17.6%** |
| ACD* Gsl | $602,270 | | 147,799 | 1,298 | 6.4% |
| ACD* Dsl | $513,527 | | 160,438 | 1,638 | 9.5% |
| BWS* Gsl | $74,984 | | 23,427 | 206 | 0.8% |
| BWS* Dsl | $95,462 | | 12,209 | 125 | 0.9% |
| **Bus Fleet** | **$521,936** | | **128,167** | **1,308** | **7.4%** |
| TA* Gsl | $1,224 | | 382 | 3 | 0.1% |
| TA* Dsl | $520,712 | | 127,785 | 1,305 | 7.3% |
| **Employee Commute***** | **$694,418** | | **216,952** | **1,905** | **9.3%** |
| **TOTAL** | **$13,276,207** | **19,397,013** | **688,992** | **19,679** | **100.0%** |

** ACD = All County Departments; BWS = Board of Water Supply; TA = Transportation Agency; Gsl = gasoline; Dsl = Diesel*

*** Estimated calculation based on best available information. Vehicle fleet includes Board of Water Supply*

**** Assumes 21.0 MPG average at $3.20/gal for 1,139 employees commuting 80 mi/wk average*

**COUNTY OF KAUA`I EMISSIONS 2009**

| | | *kWh* | *Gallons* | *Metric Tons* | Share of Emissions |
|---|---|---|---|---|---|
| | **Cost** | **Energy Use** | **Fuel Use** | **CO2e** | |
| Buildings and Facilities | $1,724,064 | 5,564,992 | | 3,669 | 19.0% |
| Streetlights & Traffic Signals | $832,241 | 1,895,986 | | 1,250 | 6.5% |
| Water Delivery Facilities | $2,206,295 | 7,284,685 | | 4,803 | 24.8% |
| Waste Water Facilities | $1,176,708 | 4,376,871 | | 2,886 | 14.9% |
| Solid Waste Facilities | $15,647 | 33,724 | | 22 | 0.1% |
| **Facilities Energy** | **$5,954,956** | **19,156,258** | | **12,630** | **65.3%** |
| **Vehicles Fleet**** | **$957,750** | | **353,730** | **3,386** | **17.5%** |
| ACD* Gsl | $387,574 | | 139,944 | 1,229 | 6.4% |
| ACD* Dsl | $472,328 | | 177,992 | 1,817 | 9.4% |
| BWS* Gsl | $47,878 | | 18,043 | 158 | 0.8% |
| BWS* Dsl | $49,969 | | 17,751 | 181 | 0.9% |
| **Bus Fleet** | **$384,255** | | **138,818** | **1,415** | **7.3%** |
| TA* Gsl | $4,622 | | 1,742 | 15 | 0.1% |
| TA* Dsl | $379,633 | | 137,077 | 1,400 | 7.2% |
| **Employee Commute***** | **$576,695** | | **217,321** | **1,908** | **9.9%** |
| **TOTAL** | **$9,215,659** | **19,156,258** | **709,869** | **19,338** | **100.0%** |

** ACD = All County Departments; BWS = Board of Water Supply; TA = Transportation Agency; Gsl = gasoline; Dsl = Diesel*

*** Estimated calculation based on best available information. Vehicle fleet includes Board of Water Supply*

**** Assumes 22.4 MPG average at $4.65/gal for 1,217 employees commuting 80 mi/wk average*

**COUNTY OF KAUA`I EMISSIONS 2010**

| | | *kWh* | *Gallons* | *Metric Tons* | Share of Emissions |
|---|---|---|---|---|---|
| | **Cost** | **Energy Use** | **Fuel Use** | **CO2e** | |
| Buildings and Facilities | $3,031,744 | 5,555,972 | | 3,596 | 18.5% |
| Streetlights & Traffic Signals | $804,823 | 1,901,871 | | 1,231 | 6.3% |
| Water Delivery Facilities | $2,979,556 | 7,895,009 | | 5,110 | 26.3% |
| Waste Water Facilities | $1,472,145 | 4,500,907 | | 2,913 | 15.0% |
| Solid Waste Facilities | $21,221 | 41,756 | | 27 | 0.1% |
| **Facilities Energy** | **$8,309,488** | **19,895,515** | | **12,877** | **66.4%** |
| **Vehicles Fleet**** | **$1,129,754** | | **331,799** | **3,171** | **16.3%** |
| ACD* Gsl | $421,516 | | 125,876 | 1,105 | 5.7% |
| ACD* Dsl | $539,265 | | 165,611 | 1,691 | 8.7% |
| BWS* Gsl | $83,304 | | 25,583 | 225 | 1.2% |
| BWS* Dsl | $85,669 | | 14,728 | 150 | 0.8% |
| **Bus Fleet** | **$487,949** | | **145,764** | **1,486** | **7.7%** |
| TA* Gsl | $5,786 | | 1,777 | 16 | 0.1% |
| TA* Dsl | $482,163 | | 143,987 | 1,470 | 7.6% |
| **Employee Commute***** | **$692,343** | | **212,622** | **1,867** | **9.6%** |
| **TOTAL** | **$12,237,237** | **19,895,515** | **690,184** | **19,400** | **100.0%** |

** ACD = All County Departments; BWS = Board of Water Supply; TA = Transportation Agency; Gsl = gasoline; Dsl = Diesel*

*** Estimated calculation based on best available information. Vehicle fleet includes Board of Water Supply*

**** Assumes 22.5 MPG average at $3.26/gal for 1,196 employees commuting 80 mi/wk average*

## COUNTY OF KAUA`I EMISSIONS 2011

| | Cost | *kWh* Energy Use | *Gallons* Fuel Use | *Metric Tons* CO2e | Share of Emissions |
|---|---|---|---|---|---|
| Buildings and Facilities | $2,450,572 | 5,703,603 | | 3,694 | 17.4% |
| Streetlights & Traffic Signals | $783,640 | 1,943,899 | | 1,259 | 5.9% |
| Water Delivery Facilities | $3,157,292 | 7,159,438 | | 4,637 | 21.8% |
| Waste Water Facilities | $1,733,676 | 4,422,579 | | 2,865 | 13.5% |
| Solid Waste Facilities | $24,597 | 41,526 | | 27 | 0.1% |
| **Facilities Energy** | **$8,149,777** | **19,271,045** | | **12,482** | **58.8%** |
| **Vehicles Fleet**** | **$2,159,052** | | **520,234** | **5,081** | **23.9%** |
| ACD* Gsl | $563,115 | | 143,079 | 1,256 | 5.9% |
| ACD* Dsl | $1,447,269 | | 341,968 | 3,491 | 16.4% |
| BWS* Gsl | $77,032 | | 18,202 | 160 | 0.8% |
| BWS* Dsl | $71,636 | | 16,985 | 173 | 0.8% |
| **Bus Fleet** | **$679,114** | | **172,458** | **1,759** | **8.3%** |
| TA* Gsl | $5,294 | | 1,251 | 11 | 0.1% |
| TA* Dsl | $673,820 | | 171,208 | 1,748 | 8.2% |
| **Employee Commute***** | **$921,427** | | **217,719** | **1,912** | **9.0%** |
| **TOTAL** | **$14,747,535** | **19,271,045** | **910,411** | **21,234** | **100.0%** |

** ACD = All County Departments; BWS = Board of Water Supply; TA = Transportation Agency; Gsl = gasoline; Dsl = Diesel*

*** Estimated calculation based on best available information. Vehicle fleet includes Board of Water Supply*

**** Assumes 22.8 MPG average at $4.23/gal for 1,241 employees commuting 80 mi/wk average*

## ADDENDUM

## METHODOLOGY FOR EMISSIONS CALCULATIONS

This inventory follows the emissions measurement protocol for local government operations that has been consensually adopted by ICLEI and The Carbon Registry.*

County emissions were calculated in a three-step process, as follows:

1) **Compile** annual operations data on electricity *(kWh)* and fuels *(gallons of gasoline and diesel)* usage by County departmental facilities and vehicles, and estimate fuel usage in workforce commuting.**
2) **Tabulate** by function, including:
   a) buildings and facilities
   b) streetlights and traffic signals
   c) water delivery
   d) wastewater management
   e) solid waste management
   f) mass transit vehicles
   g) fleet vehicles
   h) workforce commute
3) **Multiply** by the emissions factors, including:***
   a) electricity emissions in pounds of CO2e per kW
   b) fuels emissions in pounds of CO2e per gallon

The table below provides the emissions factors used in these calculations, as well as the estimates for commuting distance, average vehicle MPG, and energy prices over the five-year period.

| ***EMISSIONS FACTORS*** | **2007** | **2008** | **2009** | **2010** | **2011** | **Source** |
|---|---|---|---|---|---|---|
| *Electricity (lbCO2e/kWh)* | *1.527* | *1.500* | *1.454* | *1.427* | *1.428* | KIUC emissions report |
| *Gasoline (lbCO2e/gal)* | *19.357* | | | | | LGOP default factors |
| *Diesel (lbCO2e/gal)* | *22.509* | | | | | LGOP default factors |
| ***COMMUTE VARIABLES*** | **2007** | **2008** | **2009** | **2010** | **2011** | |
| *Avg. Distance (mi/wk)* [a] | *80.0* | | | | | COK workforce survey |
| *Avg. Vehicle (mpg)* | *19.7* | *21.0* | *22.4* | *22.5* | *22.8* | EPA avg. fuel economy |
| ***ENERGY PRICES*** | **2007** | **2008** | **2009** | **2010** | **2011** | |
| *Electricity ($/kWh)* | *$0.36* | *$0.46* | *$0.31* | *$0.42* | *$0.42* | COK records |
| *Gasoline ($/gal)* | *$2.95* | *$3.20* | *$2.65* | *$3.26* | *$4.23* | COK records |
| *Diesel ($/gal)* | *$3.14* | *$4.07* | *$2.77* | *$3.35* | *$3.94* | COK records |

[a] *Commuting fuel gallons = [miles/wk × 50] × FTE employees ÷ mpg*

* See Local Government Operations Protocol (LGOP): http://www.icleiusa.org/tools/ghg-protocol/local-government-operations-protocol

** A 2011 County workforce survey was used to derive the estimate of average weekly miles driven in commuting.

*** CO2e Emissions (metric tons) = Electricity or fuel use (kWh or gal.) x Emission factor (lbs CO2 per kWh or gal.) ÷ 2,204.62 (lbs per metric ton)

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## APPENDIX E

# Summary of Employee Survey Findings

An employee survey was distributed and completed in 2011 by 284 employees or 23% of the total workforce. The survey showed that the average employee drives 80 miles per week, and this was used to determine the CO2e from County worker commuting. This and other survey findings are presented below.

**Commute**

- 80 miles per week average *(60 mi. median)*
- 84 miles per week average to Lihu`e work sites
- 70 miles per week average to other work sites
- 20% go less than 20 miles, 18% go over 150 miles
- 82% of miles in own car, 18% by other mode
- 88% use own car, 7% carpool, 4% bus, 1% park & ride

**Vehicle**

- County Vehicle: 55% use, 47% go under 10 mi.
- Own Vehicle: 35% use at work, 66% go under 10 mi.

**Economic Pressure**

- 45% may upgrade to higher mpg car
- 12% may ride bus instead
- 28% may do nothing different

**Behavior**

- 92% turn off lights
- 85% turn off computers
- 69% turn off personal appliances
- 64% turn off printers
- 47% could tolerate A/C at 78 degrees
- 50% drink tap water, 28% bottled water

**Recycling**

- Over 60% of top 5 materials always recycled
- 78% always recycle aluminum cans
- 76% always recycle No. 1 plastic
- 69% always recycle newsprint
- 64% always recycle office paper
- 61% always recycle toner cartridges

***Detailed findings are highlighted on the following pages***

## Fuel Use

**Q2. Where is your work location?**
**Q3. How many miles do you commute roundtrip to your workplace each week?**

| | Respondents | Miles/Week | Avg. |
|---|---|---|---|
| Commute to Lihu`e | 210 | 17,643 | 84.0 |
| Not to Lihu`e | 74 | 5,152 | 69.6 |
| **Total** | **284** | **22,794** | **80.3** |
| | | *Mean* | *80.3* |
| | | *Median* | *60.0* |
| | | *Std. deviation* | *72.3* |

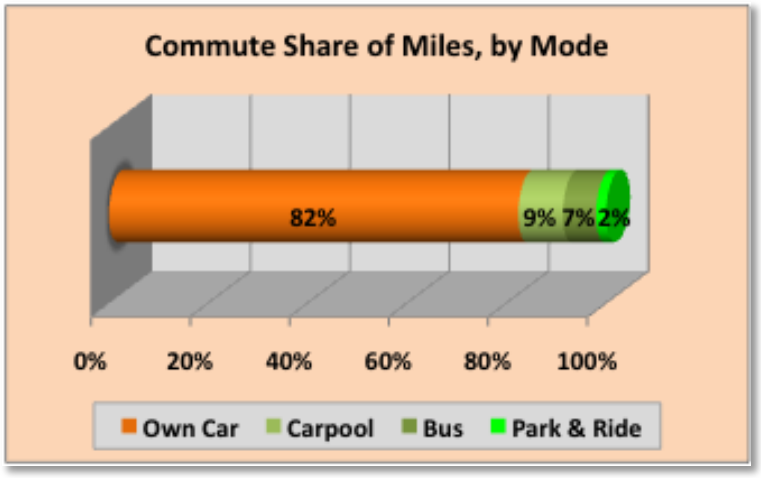
| Miles/Week | Respondents | Share |
|---|---|---|
| > 150 | 50 | 18% |
| 100-149 | 57 | 20% |
| 50-99 | 57 | 20% |
| 20-49 | 62 | 22% |
| < 20 | 58 | 20% |
| Total | 284 | 100% |

| | |
|---|---|
| Use own car for all miles | 88% |
| Work in Lihue | 74% |

**Q4. How many miles each week do you commute via each of the following methods?**

**Commute by Mode**

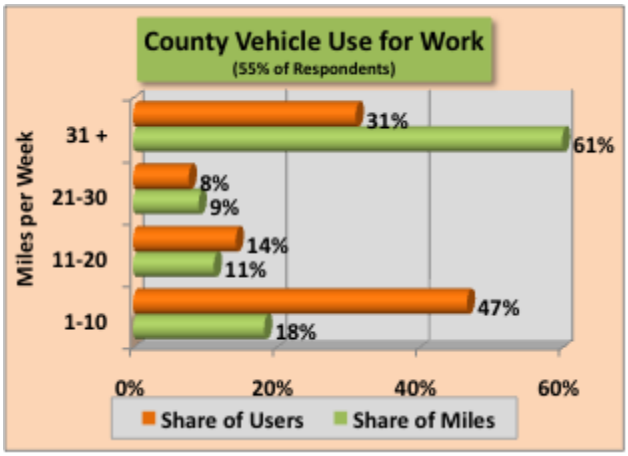
| | Miles/ Week | Avg. Mi./Wk. | Share of Miles | Number |
|---|---|---|---|---|
| Own Car | 22,794 | 80 | 82% | 284 |
| Carpool | 2,249 | 98 | 9% | 23 |
| Bus | 1,625 | 135 | 7% | 13 |
| Park & Ride | 467 | 117 | 2% | 4 |



**Q7. Do you use a County vehicle for work-related travel?**
**Q8. If so, how many miles per week on average do you drive a County vehicle?**

**Use County Vehicle At Work** *(n = 167)*

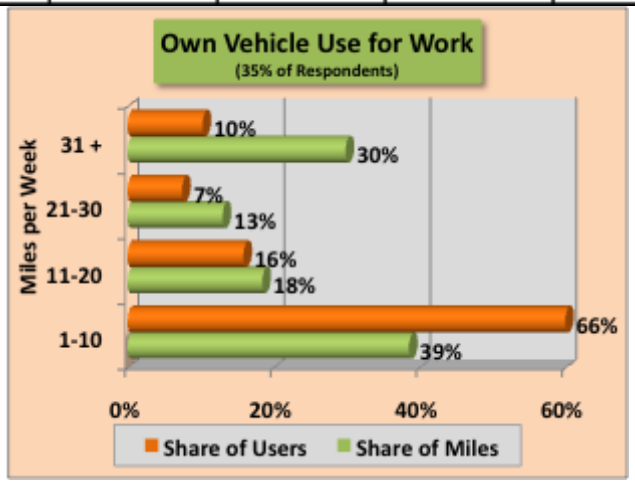
| Number of Workers | Mi. Range | Est. Miles | Share of Users | Share of Miles |
|---|---|---|---|---|
| 78 | 1-10 | 780 | 47% | 18% |
| 24 | 11-20 | 480 | 14% | 11% |
| 13 | 21-30 | 390 | 8% | 9% |
| 52 | 31 + | 2,600 | 31% | 61% |




**Q9. Do you use your personal vehicle for work-related travel?**
**Q10. If so, how many miles per week on average do you drive your personal vehicle for County business?**

**Use Own Vehicle At Work** *(n = 107)*

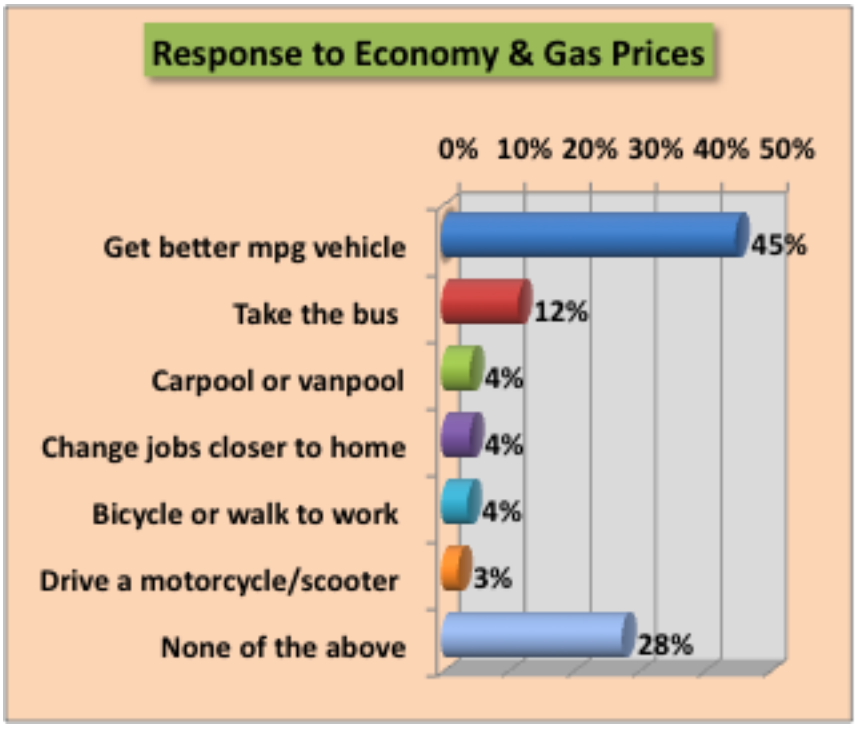
| Number of | Mi. Range | Est. Miles | Share of Users | Share of Miles |
|---|---|---|---|---|
| 71 | 1-10 | 710 | 66% | 39% |
| 17 | 11-20 | 340 | 16% | 18% |
| 8 | 21-30 | 240 | 7% | 13% |
| 11 | 31 + | 550 | 10% | 30% |



## Economic Pressure

**Q11. Given the current economy and/or a return to $4.50+ gas, which of the following would you consider?**

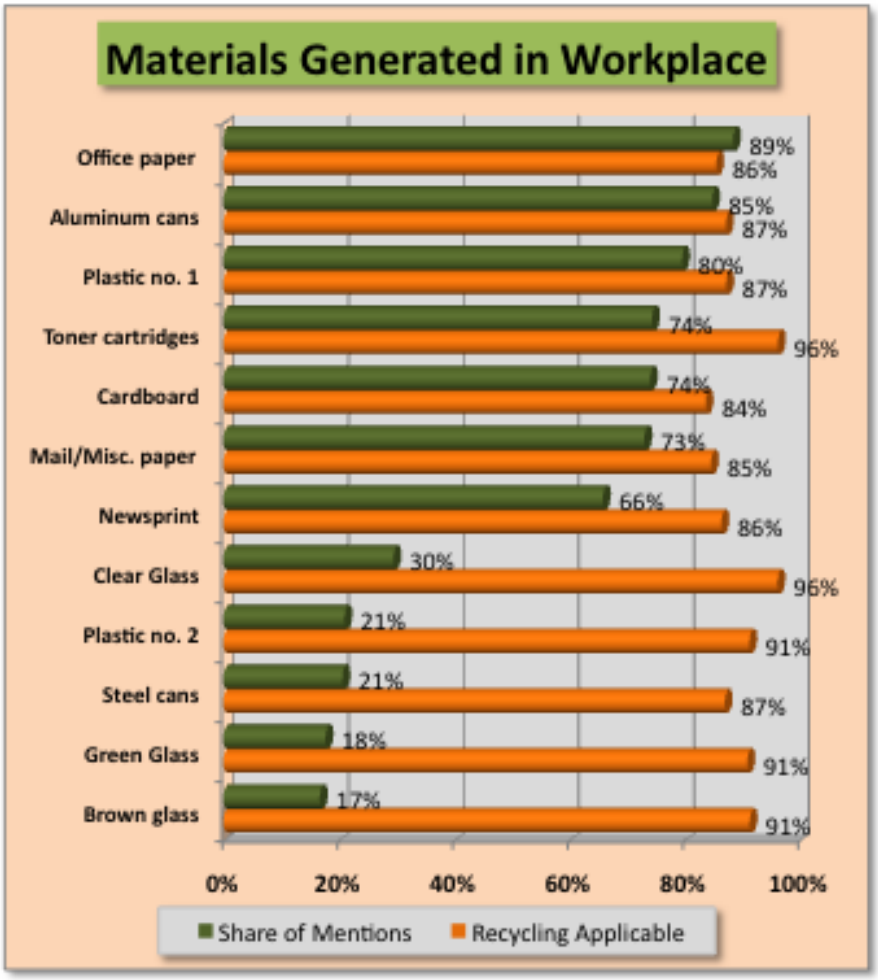
| Response to Economy/Gas | Responses | Share |
|---|---|---|
| Purchase a vehicle with better mpg | 122 | 45% |
| Take the bus some or all of the time | 32 | 12% |
| Carpool or vanpool some or all | 12 | 4% |
| Change jobs to work closer to home | 12 | 4% |
| Bicycle or walk to work | 11 | 4% |
| Drive a motorcycle/scooter | 7 | 3% |
| None of the above | 75 | 28% |



## Recycling

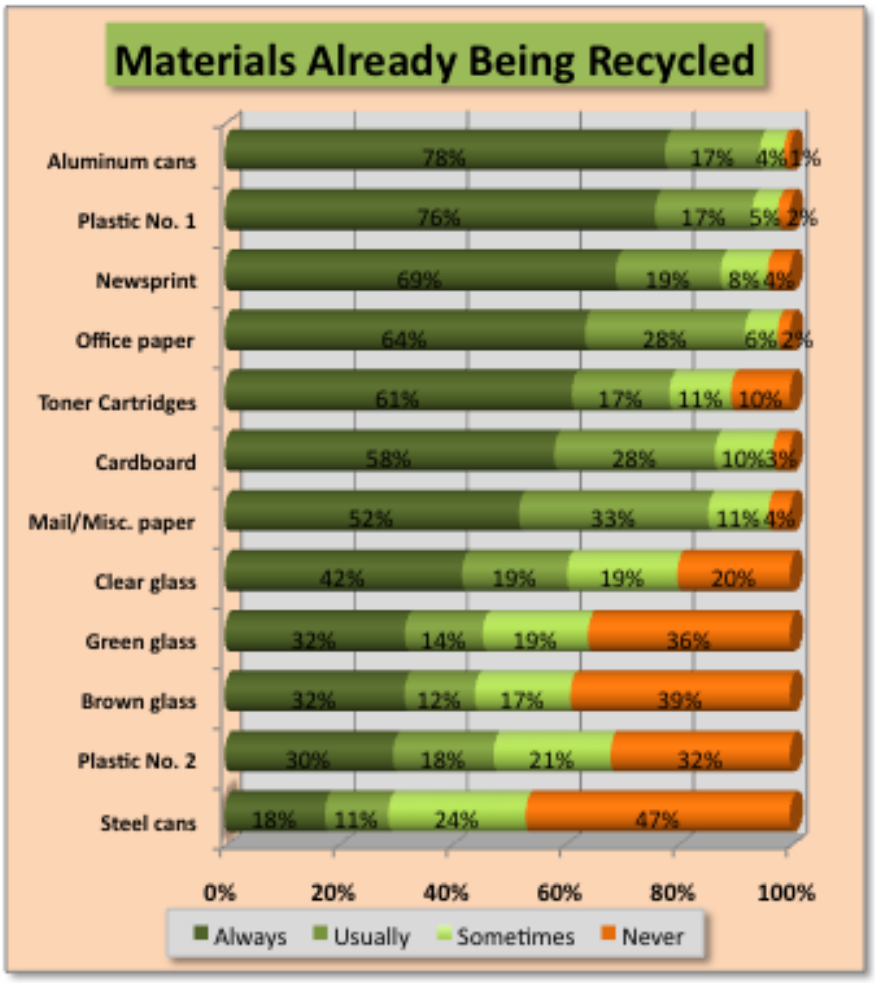
**Q23. What types of common recyclable materials are generated in your workplace?**

| | Mentions | Share of Mentions | Recycling Applicable |
|---|---|---|---|
| Brown glass | 51 | 17% | 91% |
| Green Glass | 54 | 18% | 91% |
| Steel cans | 63 | 21% | 87% |
| Plastic no. 2 | 64 | 21% | 91% |
| Clear Glass | 90 | 30% | 96% |
| Newsprint | 201 | 66% | 86% |
| Mail/Misc. paper | 223 | 73% | 85% |
| Cardboard | 226 | 74% | 84% |
| Toner cartridges | 227 | 74% | 96% |
| Plastic no. 1 | 243 | 80% | 87% |
| Aluminum cans | 259 | 85% | 87% |
| Office paper | 270 | 89% | 86% |



**Q24. Which materials are already being recycled in your workplace and to what extent?**

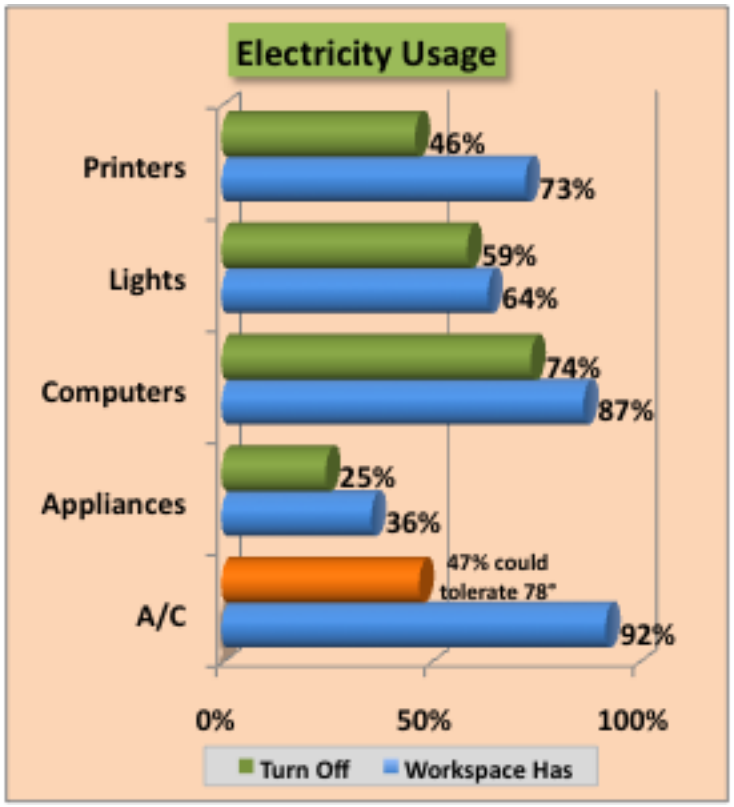
| | Always | Usually | Sometimes | Never |
|---|---|---|---|---|
| Steel cans | 18% | 11% | 24% | 47% |
| Plastic No. 2 | 30% | 18% | 21% | 32% |
| Brown glass | 32% | 12% | 17% | 39% |
| Green glass | 32% | 14% | 19% | 36% |
| Clear glass | 42% | 19% | 19% | 20% |
| Mail/Misc. paper | 52% | 33% | 11% | 4% |
| Cardboard | 58% | 28% | 10% | 3% |
| Toner Cartridges | 61% | 17% | 11% | 10% |
| Office paper | 64% | 28% | 6% | 2% |
| Newsprint | 69% | 19% | 8% | 4% |
| Plastic No. 1 | 76% | 17% | 5% | 2% |
| Aluminum cans | 78% | 17% | 4% | 1% |



## Electricity Use

**Q12-16. Which of the following do you have in your workplace, and do you turn them off when you leave work?**

| | Workspace Has | Turn Off | Green Share |
|---|---|---|---|
| A/C | 92% | 47% | NA |
| Appliances | 36% | 25% | 69% |
| Computers | 87% | 74% | 85% |
| Lights | 64% | 59% | 92% |
| Printers | 73% | 46% | 64% |



## Water Use

**Q22. What type of drinking water do you use in the workplace?**

| | Tap | Bottled | Dispenser |
|---|---|---|---|
| Drinking Water | 50% | 28% | 22% |

# Appendix F

## Results of Preliminary Department/Agency Online Survey – Key Questions

As a preliminary step in the creation of this Plan, County departments and agencies were surveyed by Kaua`i Planning & Action Alliance (KPAA) regarding sustainability initiatives and challenges in their respective areas. Key results from this survey are summarized below:

### Departmental Initiatives

**Q4. Has your department undertaken any steps within the past year to reduce carbon emissions and/or conserve resources?**

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Yes | 85% | 17 |
| No, not yet | 15% | 3 |
| *answered question* | *20* | |
| *skipped question* | *0* | |

### Steps Taken

**Q5. What steps has your department taken within the past year to reduce carbon emissions and/or conserve resources?** *(mark all that apply)*

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Energy Efficiency - Provided training to staff on efficiency and conservation measures | 29% | 5 |
| Energy Efficiency - Switched to energy efficient office equipment and/or light bulbs | 47% | 8 |
| Green Transport - Encouraged staff to ride the bus or carpool | 53% | 9 |
| Green Energy - Purchased hybrid, electric or alternative fuel vehicles for the department | 71% | 12 |
| Waste Reduction - Discouraged printing hard copies unless necessary | 82% | 14 |
| Waste Reduction - Required double-sided printing | 29% | 5 |
| Waste Reduction - Recycled mixed paper, #1 and #2 plastic, cardboard and HI5 containers | 82% | 14 |
| *answered question* | *17* | |
| *skipped question* | *3* | |

## Next Steps

**Q8. What types of energy efficiency or resource conservation actions are already planned in your department within the next year?** *(mark all that apply)*

| Answer Options | Response Percent | Response Count |
|---|---|---|
| Energy Efficiency - Provide training to staff on efficiency and conservation measures | 42% | 5 |
| Green Transport - Institute new policies or procedures on fuel use | 42% | 5 |
| Green Transport - Encourage staff to ride the bus or carpool | 50% | 6 |
| Waste Reduction - Discourage printing hard copies unless necessary | 58% | 7 |
| Waste Reduction - Require double-sided printing | 33% | 4 |
| Waste Reduction - Recycle mixed paper, #1 and #2 plastic, cardboard and HI5 containers | 50% | 6 |
| Green Purchases - Establish new green purchasing policies for the department | 33% | 4 |
| Green Purchases - Purchase paper products with a high percentage of recycled content | 33% | 4 |
| *answered question* | *12* | |
| *skipped question* | *8* | |

## Primary Challenges

**Q9. What are the primary challenges you anticipate you will have to overcome in undertaking these measures?**

- Educating employees to dispose in proper bin
- Regular collection and removal of bottles, paper, etc. from the office
- Added cost to make changes
- Lack of understanding/support for e-signatures
- Lack of formal paper document retention policies v. electronic files
- Need reminders and coordinated training so all employees get the same message
- In some departments, sustainability of resources is secondary to immediate life-threatening needs
- Procurement process; doesn't consider true cost; lengthy process for new solutions
- Staff resistant to giving up bottled water and using reusable dishes, utensils
- 24-hour offices use more energy
- AC duct system needs to be checked; inconsistent temperatures
- Resistance to behavior change – it will take time
- Lack of enough duplex-capable printers
- New ESCO process will take time to resolve contractual issues

**Assistance Needed**

**Q10. What, if anything, would help your department take additional action toward reducing carbon emissions and conserving resources?** *(name all that apply)*

- Countywide policies *(recycled paper, etc.)*
- Directives
- Training for managers and staff
- Training materials
- Reminders
- Informational flyers
- $$$; grant funds
- Incentives *(e.g., pre-tax bus pass)*
- Ideas of what to do
- Figuring out temperature problem
- External review of processes to see areas for reduction
- Help finding locations for mini base yards
- Parameters of partnering with private businesses

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## Appendix G

### Sustainability Is Not What We Think, It's How

**by Ken Stokes** *(excerpted from training presentation)*

Sustainability is about wholeness…about the ongoing, inter-looped processes of a whole system. Sustainability is not about permanence…or holding onto something. It's not about something fixed and controllable…going on as it always has in a linear fashion.

It's about something complex and dynamic and non-linear and reciprocal. It's about a new way of thinking that requires us to hold lots of different things in our heads at the same time, and focus more on the relationships between things rather than the things themselves. It's about "whole systems thinking." It's not what we think…it's how.

Go ahead and roll your eyes…yet I assure you…this is not brain surgery. Neither is it child's play.

It is simply essential to shift the way we think so that we can begin to comprehend how humans fit in the whole earth system.

Notice I said comprehend…NOT control. This, too, is a key feature of our new way of thinking.

The good news is: We can "dance" with systems. This is how my heroine Donella Meadows describes our challenge to find and move with the rhythm of the system in which our lives are embedded.

"We can't control systems…But we can dance with them!"

We cannot choose the beat, yet we can influence the dance by how we move with it.

Sometimes, I like to think of this as the true meaning of the prayer, "Thy will be done." In this case, "Thy will" is the music of the universe, and our "Free will" is the choice of how to dance.

So, what is this music of the universe in which we're dancing?

Well, now that we've agreed that sustainability is not lots of different things to lots of different people…now that we see system sustainability is about one thing…the wholeness of the human support system…

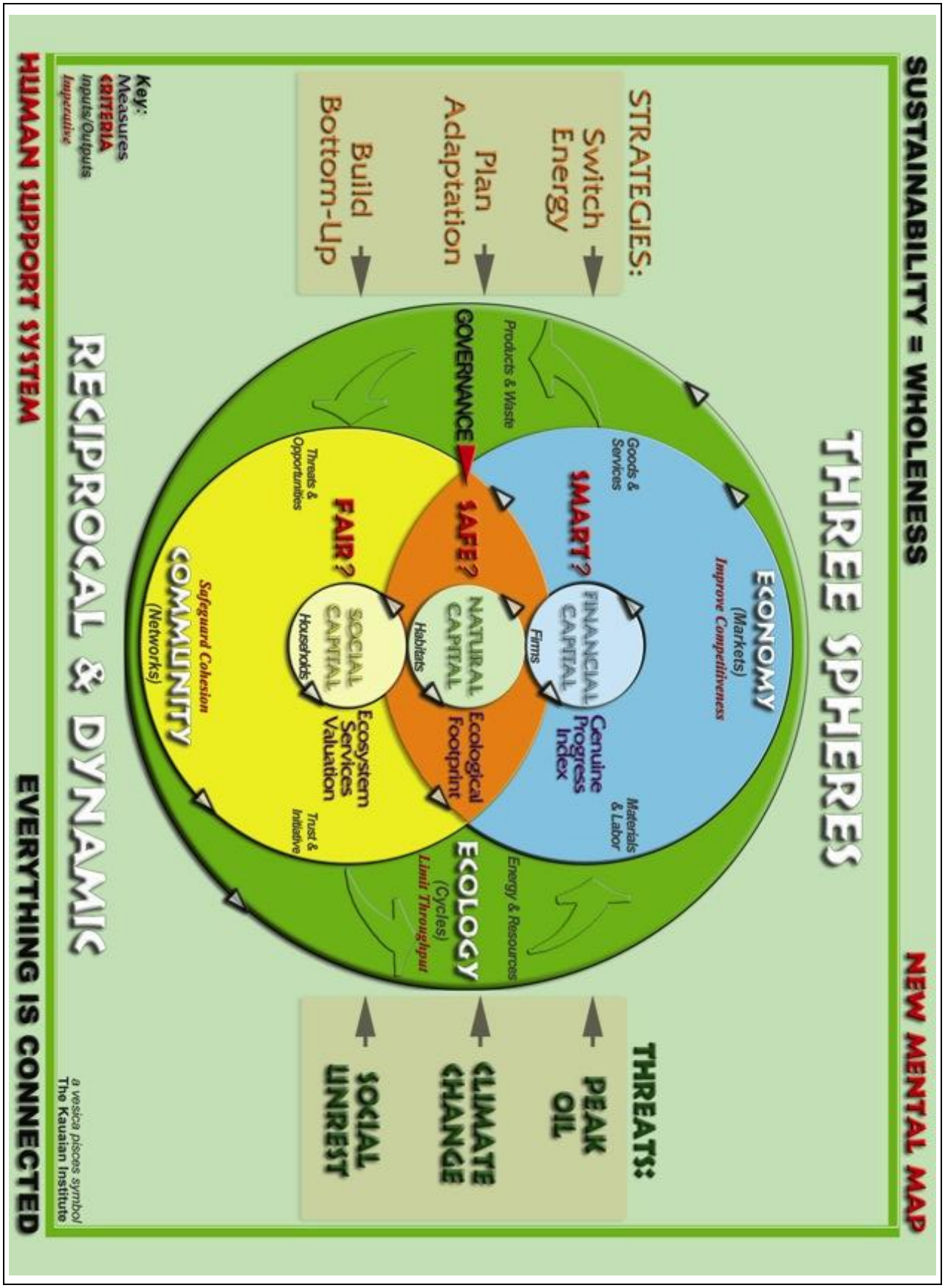
The first thing we're going to need is a new "mental map" for how this system works. And, when we start to draw up such a "mental map", the first thing we notice is that this one system is actually a set of three inter-related spheres…a blue one, a yellow one, and a green one…each with their own dynamics. And, the wholeness, the sustainability, of this system is driven by the relationships among these three spheres.

So, fundamentally, sustainability thinking is about considering all three spheres…simultaneously.

We know this is crucial because our "modern" method of thinking about parts is what has gotten us into trouble in the first place.

Sustainability is the sum of the spheres, and we need to think about Economy AND Community AND Ecology all together.

**THREE SPHERES FOR SUSTAINABILITY**



Nor is this an abstract conceptual challenge. This is where we are learning about a new form of Governance where we humans are beginning to come together to simultaneously manage all three spheres.

It's about integration. It's not about choosing which sphere will dominate…because that's not a choice we can make. It's not a balancing act, as we are so often told. It's not about the tradeoffs of one versus the other.

It's about integrating our best understanding of the interrelationships between all three spheres all the time.

In this sense, it's more like juggling with all three aspects of our earth's human support system…with three balls in the air at all times.

Our challenge is to integrate all of our human behavior and practice so that it becomes a positive feedback loop for system sustainability.

Having come to this realization, we are staggered by the implications: If we need to be simultaneously managing our financial, social and natural capital for system sustainability, then it turns out that most of what we have been doing for the past several hundred years is precisely the wrong approach.

By granting primacy to the Economy sphere, we have pretty much shot ourselves in the foot.

We have done this, mind you, not because we are stupid, but because we were ignorant. We did not know—or at least we pretended not to know—that everything is connected.

The new commonsense is that long-term prosperity and ecological health not only go together, they depend on one another.

Thanks to our new "mental map", we see much more clearly now that just because it's complex doesn't mean it's incomprehensible.

Much of the way we used to do things becomes simply unthinkable. It doesn't fit on our new "mental map.

Now we can map onto these three spheres the awesome threats to sustainability that we face today. We can see Peak Oil as the most significant threat to our Economy, and Climate Change as the most significant threat to our Ecology. We can also see that Social Unrest is the most significant threat in our Community sphere.

The important point about each of these threats is that they are symptoms of unsustainability. Peak Oil, Climate Change and Unrest are not the problem; unsustainability is the problem. And, we cannot resolve any one of these threats without finding resolutions for all of them together.

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## Appendix H

**NOTES FOR CREATING THE CHECKLIST:** 1) Develop the checklist using logic that directs them to appropriate follow-up questions based on their answers. 2) Responses should be entered into a database that can be viewed internally. 3) Link this form with the PID form or revise PID to include these questions.

**PURPOSE:** This checklist is a required step in the planning or development of a new policy, project, program or facility. The purpose is to ensure that the goal, vision and principles of the *County Operations Climate Action and Sustainability Plan* have been considered and incorporated. For purposes of this checklist, the word "project" is used as a generic term to represent any policy, project, program or facility that is the subject of this checklist. Certain answers may be flagged for follow-up with a staff member to discuss possibilities of how the sustainability of the project might be enhanced.

**DRAFT QUESTIONS:**

1. Name of Project_____
2. Project Lead _____ Phone_____ Email_____
3. Does the project have a PID ID number?
   - Yes [LOGIC: Number is _____ (going to ID number provides additional information, such as the project team)]
   - No (LOGIC: Ask for additional information such as team members, etc.)
4. Type of project:
   - Policy
   - Program
   - Project
   - Facility
5. What is the anticipated implementation timeline for this project or project component?
   - Start Date
   - End Date
6. Does it support the goal of the Climate Action and Sustainability Plan? *(link to goal)*
   - Yes
   - No
7. What will the net energy impact be?
   - Additional energy consumption
   - Same as current usage
   - Reduced energy usage
   - Doesn't apply (LOGIC: Provide explanation why it doesn't apply.)

8. Is there a renewable energy component to the project?
   - Yes (LOGIC: Please describe.)
   - No (LOGIC: Could the project be redesigned to include renewable energy?)

9. What will the waste profile be?
   - Additional waste
   - Same as current volume
   - Reduced waste
   - Doesn't apply (LOGIC: Provide explanation why it doesn't apply.)

10. What will the water usage impact be?
    - Additional water used
    - Same as current volume
    - Reduced water usage
    - Doesn't apply (LOGIC: Provide explanation why it doesn't apply.)

11. What will be the carbon emissions impact be? *(add link to definition of carbon emissions)*
    - Additional emissions
    - Same as current level of emissions
    - Reduced emissions
    - Doesn't apply (LOGIC: Provide explanation why it doesn't apply.)

12. Does this project support the social responsibility principles stated in the plan? *(link to principles)*
    - Yes
    - No (LOGIC: If not, what principles are not supported?)

13. Does this project support environmental stewardship principles of the plan? *(link to principles)*
    - Yes
    - No (LOGIC: If not, what principles are not supported?)

14. Does this project support economic vitality principles of the plan? *(link to principles)*
    - Yes
    - No (LOGIC: If not, what principles are not supported?)

15. Has community input been incorporated into this project? If yes, describe means of solicitation and incorporation. If no, explain why not.

16. Will this project require the use of or generate toxins or pesticides?
    - Yes (LOGIC: What actions have been taken to consider safer alternatives?)
    - No

17. Does this project offer any sustainability leadership opportunities that could be explored if additional support was available?
    - Yes, describe what additional support is required.
    - No

Additional comments or information:

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**COUNTY OPERATIONS SUSTAINABILITY AND CLIMATE ACTION PLAN**

**ADMINISTRATIVE WORKING GROUP PARTICIPANTS**

## Appendix I

| | |
|---|---|
| Ms. Lani Agoot | Office of Boards and Commissions |
| Ms. Cyndi Ayonon | Office of the Mayor |
| Ms. Pualani Borales | Department of Personnel Services |
| Mayor Bernard P. Carvalho, Jr. | Office of the Mayor |
| Mr. Al Castillo | Legal Counsel |
| Mr. George K. Costa | Office of Economic Development |
| Mr. Ian Costa | Department of Parks and Recreation |
| Mr. David Craddick | Department of Water |
| Mr. Michael Dahilig | Planning Department |
| Mr. Daryl Date | Fire Department |
| Ms. Mary Daubert | Public Information Office |
| Mr. Larry Dill | Department of Public Works |
| Ms. Cindy Duterte | Department of Parks and Recreation |
| Ms. Tamara Duterte | Transportation Agency |
| Ms. Amy Esaki | Legal Counsel |
| Mr. Kenneth Estes | Planning Department |
| Lt. Robert Gausepohl | Police Department |
| Mr. Ka`aina Hull | Planning Department |
| Mr. Brian Inouye | Department of Public Works, Building Division |
| Ms. Leanora Kaiaokamalie | Planning Department |
| Mr. Jeremy Kalawaia Lee | Transportation Agency |
| Ms. Celia Mahikoa | Transportation Agency |
| Mr. Mark Marshall | Civil Defense Agency |
| Ms. Sally Motta | Department of Finance |
| Mr. Peter Nakamura | Planning Department |
| Ms. Nyree Norman | IT Department |
| Ms. Iris Parongao | Agency on Elderly Affairs |
| Captain Ale Quibilan | Police Department |
| Mr. Brandon Raines | IT Department |
| Mr. Gerald Rapozo | Liquor Control Commission |
| Mr. Lenny Rapozo, Jr. | Department of Parks and Recreation |
| Mr. Kirk Sakai | Department of Water |
| Mr. Glenn Sato | Office of Economic Development |
| Mr. Ben Sullivan | Office of Economic Development |
| Mr. Lyle Tabata | Department of Public Works |
| Ms. Kealoha Takahashi | Agency on Elderly Affairs |
| Ms. Teresa Tamura | Office of Boards and Commissions |
| Ms. Shelley Teraoka | Housing Agency |
| Ms. Beth Tokioka | Office of the Mayor |
| Ms. Marisa Valenciano | Planning Department |
| Mr. Jeff Weiss | Fire Department |

**COUNTY OPERATIONS SUSTAINABILITY AND CLIMATE ACTION PLAN**

**ADMINISTRATIVE WORKING GROUP PARTICIPANTS**

| | |
|---|---|
| Chief Robert Westerman | Fire Department |
| Ms. Marie Williams | Planning Department |
| Mr. Art Williams | Office of the Prosecuting Attorney |

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